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USSR Report

CONSTRUCTION AND EQUIPMENT

No. 12

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CONTENTS

CONSTRUCTION

CONTENTS (Continued) Page

CONSTRUCTION

INDUSTRIAL OVERVIEW FOR FOURTH YEAR OF TENTH FIVE-YEAR PLAN

Moscow PROMYSHLENNOYE STROITEL'STVO in Russian No 2, Feb 80 p 2

[Unsigned Article]

In his report at the Plenary Session of the Central Committee of the CPSU in November 1979, the Secretary General of our party, Leonid Il'ich Brezhnev emphasized the fact that the scale of creative activity of the Soviet people is especially clearly manifested in the enormous scales of contruction.

The capital investments in the national economy in four years of the 10th Five-Year Plan will exceed 500 billion rubles. This will permit significant expansion of the fixed productive capital.

Among the new industrial enterprises put into operation, such industrial giants as the Sayano-Shushenskaya hydroelectric power plant, the Kama automobile plant, the Atommash plant, the Leningrad, Kursk, Chernobyl'skaya and Armenian nuclear power plants, the Lisichanskiy and Pavlodarskiy oil refineries, the Kursk Tannery, the meat combines in Lipetsk and Zhitomir, the Glavnyy Kakhovskiy main canal and many others are worthy of mention.

The dynamic development of the territorial-production complexes is continuing. In four years of the 10th Five-Year Plan the Western Siberian, Brats, Pavlodar-Ekibastuz, Orenburg, Nizhnekamskiy and other complexes have provided the entire increase in oil and gas extraction, a significant part of the electric power generation, iron ore and coal extraction and the truck and tractor production. More than 1500 km of railroad track has been laid on the BAM [Baykal-Amur Railroad].

Since the first days of the five-year plan the emphasis has been on the basic branches of the national economy: there have been increases in the production of ferrous and nonferrous metals, electric power production, coal and petroleum extraction. As a result of the accelerated development of the branches determining technical progress, the structure of industrial production has been improved.

Nevertheless, Leonid Il'ich Brezhnev has characterized the situation in the capital construction as unsatisfactory. Frequently the construction

times are drawn out so that they significantly exceed the normatives for incomplete construction. Resources are not always directed to the construction sites with highest priority. There are cases of misuse of capital investments and diversion of workers and materials from important state projects. In a number of cases the construction of further capacity in adjacent branches has not been coordinated.

When investigating the draft of the plan for 1980, it was proposed that the number of newly started construction projects be reduced, and that maximum emphasis be placed on completion of facilities to be started up and the fastest introduction of new capacity.

"Decisions to build production facilities must be made only after realistic consideration of all factors insuring future uninterrupted operation of these facilities -- raw materials, transportation and manpower," said Leonid Il'ich Brezhnev. "When the decision has been made, the capital investments, material and financial resources must be allocated for the new construction sites fully in accordance with the normatives."

The knotty problems of social-economic progress in our country deeply analyzed in the speech at the Plenary Session of the Secretary General of the Central Committee of the CPSU, chairman of the Presidium of the Supreme Council L. I. Brezhnev found its reflection in the state plan for economic and social development of the country in 1980 adopted by the Supreme Council of the USSR.

The year of 1980 marks a new giant step in the development of the production forces of the socialist homeland. Being the final year of the Tenth Five-Year Plan, it will simultaneously serve as the base for the successful development of the next, 11th Five-Year Plan.

Preparations are being actively made in 1980 for the 26th Congress of the CPSU, and the 110th birthday of V. I. Lenin is being celebrated.

The state plan for this year provides for a significant increase in absolute increments in industrial and agricultural production. Enormous significance is being attached to the concentration of forces on the development of key, vitally important elements of the economy -- the fuel and raw material base, power engineering, transportation, metallurgy, machine building, chemistry and other branches of industry.

In 1980 the capital investments will exceed the investments previously planned for the last year of the five-year plan by 6.6 billion rubles, reaching 119.1 billion rubles. For technical reequipment and reconstruction 18.4 billion rubles will be set aside as apposed to 16 billion rubles according to the five-year plan.

Productivity in construction must increase by 3.5% in 1980 as a result of improving the technical level and the organization of labor. The construction ministries have this capability. This is indicated by the selection of articles on work experience in this plan of the USSR Ministry of Industrial

Construction brought to the attention of the readers. In 1979, in the joint "construction" pavilions the USSR Ministry of Industrial Construction jointly with the Exposition of Achievements of the National Economy of the USSR held a Plenary Session of the Scientific and Technical Council of the Ministry on the topic of "Raising the Technical Level and Lowering the Labor Consumption of Construction in the USSR Ministry of Industry of Industrial Construction."

The leading workers of the central apparatus of the union ministry and the republic ministries, Glavstroy [Main Construction Adminstrations], construction administrations and institutes and the leading workers of the USSR Gosstroy, construction ministries, and a number of scientific construction institutes of the country participated in the discussion of this problem.

Representatives of the Construction Division of the Central Committee of the CPSU and the USSR Gosstroy participated in the work of the Plenary Session.

A report on raising the technical level of construction on the basis of introducing the achievements of science and engineering was made by Minister of Industrial Construction of the USSR A. M. Tokarev; a report on raising the organizational and technical level of the ministry was made by deputy minister of the Industrial Construction of the USSR A. I. Shchepet'yev.

During the course of the discussion, a study was made of such urgent problems as the improvement of the administration of construction on the basis of the Belorussian method of planning and developing of cost accounting, improvement of the material-technical equipment of the construction sites on the basis of the engineering-technological completeness, the spreading of progressive forms of the organization of labor, industrialization of construction and reduction of the proportion of manual labor.

The Plenary Session of the Scientific and Technical Council defined the further paths of improvement of the activity of the ministry based on raising the technical level of production. The recommendations adopted by the Plenary Session constitute an all-around program for practical implementation of the party and government requirements formulated in the resolution of the Central Committee of the CPSU and the USSR Council of Ministers "On improvement of planning and strengthening of the effect of the economic mechanism on improving production efficiency and work quality."

During the Plenary Session its participants were familiarized with the thematic exposition of the USSR Ministry of Industrial Construction at which there were about 330 exhibits.

There were 72 exhibits in the open area, including constuction machinery, inventory and attachments grouped around 6 types of construction and installation work -- finishing, roofing, concrete and stone work, the construction of finish flooring and containerization; more than 250 exhibits were presented on the stands in the hall. The latter were broken down into 8 divisions. The presented exhibits indicate the progress made by the USSR Ministry of Industrial Construction in the improvement of the organization and the

technology of construction, improvement of its industrialization and mechanization, improvement of quality and the quite broad use of automated control systems and also the result of experimental and demonstration model construction.

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NEW TARGET PROGRAMS FOR MORE SCIENTIFIC CONSTRUCTION DESCRIBED

Moscow PROMYSHLENNOYE STROITEL'STVO in Russian No 2, Feb 80 p 3-5

[Article by A. M. Tokarev, USSR Minister of Industrial Construction]

Along with persistent growth of the construction programs implemented in our country, strict and stricter requirements are being imposed on the work of the branch every year. To build faster, more consistently with higher quality and more efficiently -- this is the common goal set for the branch workers by the party. The universal key to the all-around solution of problems in all links of the construction process is raising its technical level, primarily on the basis of the introduction of the achievements of science and engineering into production and the use of the experience of the best construction sites.

In the resolutions of the Central Committee of the CPSU and the USSR Council of Ministers "On Improving Planning and Strengthening of the Effect of the Economic Mechanism on Increasing Production Efficiency and Raising the Quality of Work" the attention of the USSR Gosplan, the ministries and departments of the USSR, the councils and ministers of the union republics was brought to the necessity for accelerating the realization of scientific and technical discoveries and developments aimed at increasing the production growth rates of social labor and production quality. Implementing these instructions by the party and the government, it is necessary to remember well the words spoken by L. I. Brezhnev at the 25th Congress of the CPSU to the effect that progress in the scientific and technical revolution, its favorable effect on the economy and on all aspects of life of the society cannot be insured by the efforts of the scientific workers alone. The envolvement of all participants in social production, all elements of the economic mechanism in this historically significant process is acquiring a more and more important role.

What is the situation in our ministry? What are the prospects for work in this direction? How will we strengthen the union of science and engineering with production? How will we use for growth of the technical level of construction?

During the Tenth Five-Year Plan the USSR Ministry of Industrial Construction has adopted the target-program method of accelerating scientific and technical progress. Long range complex target programs for scientific and technical progress are being implemented in the ministry which provide for the solution of knotty problems and predetermine the achievement of the greatest cost benefit. The basic element of these programs is the conclusion of long range agreements with the scientific research institutes by which the scientists are realizing the target developments. The customer ministries, the USSR Ministry of Installation and Heavy Specialized Construction and the soyuzglavkomplekty are becoming involved in this waork along with the general contracting ministries.

At the present time there is a central long-range target program "Kachestvo [Quality]" and its component programs: "Potok [Flow]," "Podryad [Contract]," "Komplekt [Complete]," "Progress," SIDPS[1],"Nechernozem'ye [Nonchernozem region]" and "Monolit [Monolith]." Their essence is described by the following.

All elements of the construction process are encompassed by the "Quality" program. Its purpose is to create a united all-around quality control system for the final product of construction within the USSR Ministry of Industrial Construction. The implementation of the program permits comprehensive and operative influencing of the introduction of advanced innovations in each phase of the operations (from planning to turnover of the projects), and conversion to the planning of construction quality. Within the framework of the "Quality" program the USSR Ministry of Industrial Construction has put the first phase of the all-around quality control system for the final production of construction (KSUK KSP) into operation. It is now being used at more than 60 trusts and 50 enterprises of the construction industry.

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[1] Long-range flow construction systems.

The purpose of the "Flow" program is to insure rhythmicity of construction and introduction of projects into operation on the basis of all-around continuous flow production. This program is basically aimed at broader use of the Orlovskaya "continuity" and other flow systems.

The "Contract" program is designed for the introduction of the brigade contract. In this five-year plan we are converting about 60% of all brigades to contract, which will make it possible to increase their output by 20% and lower the annual expenditures of labor in each brigade by 377 man-days.

The cost benefit will be several tens of millions rubles. By the end of the five-year plan we shall start to perform 30% of all operations at industrial construction sites under brigade contract.

The "Complete" program is designed to eliminate and reduce to a minimum the miscalculations in providing the construction sites with materials, products and structural elements. The work toward making maximum use of consolidated assemblies, structural elements and modules and also the products and intermediate products of increased structural prefabrication, and the application of containerized deliveries to the work area on the construction site will be performed in accordance with the "Complete" program. At the present time about 60% of the kit-type products are delivered to the sites in containers and palletized form. In this five-year plan the shipping of goods by this advanced method will be increased by fivefold.

Specialized complete provision services -- administrations and trusts -- are being created everywhere. Practice shows that the organization of the administrations of production-technological kit deliveries will make it possible to reduce the labor consumption of construction by 10-15%, to save a large number of materials, to essentially reduce the idle time and insure a constant rhythm in operation. For execution of the "Complete" program the Technological Design Institute of the USSR Ministry of Industrial Construction has compiled "Instructions for the Development of Standardized Technological Normative Documents for Complete Kit Provisioning in Preparing for Operations on the Industrial and Civil Construction Sites" (VSN-72-76).

The "Progress" program is aimed at raising the level of mechanization of concrete, finishing and roofing operations where the proportion of manual labor is the highest. In implementing this program, we have developed and are making broad use of advanced standard sets of equipment, tools and stocks. The standard sets are being actively introduced in the organizations of the Glavvostoksibstroy [Main Eastern Siberian Construction Administration]. In the advanced brigades of plasterers, painters, roofers and masons equipped with standard sets, the work output in natural indexes has become 25 to 30% higher than the average for the main administration. In 1979 the workers of the ministry collective received another 2110 standard sets for the performance of installation work, earth work, concrete, stone and plaster work, painting, carpentry, tile work, glazing and roofing and also flooring.

The most important national economic projects are being set up by the program for the development of long-range flow construction systems (SIDPS). The "Nonchernozem Region" program provides for the organization of industrial construction on the projects in the Nonchernozem Region of the RSFSR. The technology for constructing buildings from monolithic concrete is being developed by the "Monolith" program.

The idea of the target programs has led to a more efficient form of cooperation with the scientific research institutes of the country and for organizations. We have begun to conclude long-range agreements for business cooperation instead of the annual agreements concluded previously. Experiments are now being conducted more deeply and more effectively; new production processes are being developed more carefully. Each such agreement has been raised to the rank of a planning document; it regulates the interrelation of the scientific collective and the ministry. The legal status of the partners is clearly defined. Such agreements have been concluded with the TSNIISK Institute imeni Kucherenko, NIIZhB [Scientific Research Institute of Reinforced Concrete], the TsNIIpromzdaniy, the Kuybyshev ISI Insitute imeni Kuybyshev, the NIIES Insitute, the VNIIstromom Institute imeni Budnikov, the NIIOSP Institute imeni Gersevanov, the Construction Institute in the People's Republic of Bulgaria and other scientific collectives. The most important index of this creative union is the broad introduction of new technical and technological solutions.

The USSR Ministry of Industrial Construction turns over more than 2400 industrial projects annually, 350 to 400 of which are projects on the national economic planning level. The ministry executes half or more of the start program of the country annually in the construction of facilities for oil refining, the production of mineral fertilizers, chemical fibers, plastics and resins, ammonia, cellulose, paper, cardboard, and so on. Such large-scale, complicated construction programs are oriented toward universal organization of the industrial flow construction. The level of industrialization has basically been increased as a result of increasing the proportion of the completely prefabricated buildings and structures. The ministry has set the goal of reaching the 80% level by the end of the five-year plan.

In 1978 the volume of construction from large elements, assemblies, panels and modules with completely prefabricated supporting and enclosing structures amounted to 4.5 billion rubles of construction and installation work, and the proportion exceeded 71%. A high level of prefabricated construction was reached in the Belorussian SSR Ministry of Industrial Construction, the Glavvostoksibstroy [Main Eastern Siberian Construction Administration], the Glavsrednevolzhskstroye and Glavarkhangel'skstroy Main Construction Administrations.

The highest level of prefabrication is insured on the projects included in the SIDPS systems which are already functioning on the chemical, petrochemical, oil refining, foods industry, meat and dairy industry, elevator and silo construction sites and on the projects in the Noncernozem Region of the RSFSR. The organization of construction is being completed here, and its industrialization is being increased. The construction is being

switched - flows with respect to types of production facilities. The problems of improving the volumetric-planning solutions of the buildings and complexes and the technology for the future enterprises and construction process itself are being solved systematically. Sixty-two planning and design and scientific research institutes of the country are being involved in this work. Advanced versions of the construction of the 400 largest and most important national economic projects and complexes have been developed by their efforts for the current five-year plan, including 36 plants of the USSR Ministry of the Petrochemical Industry, 31 enterprises of the Ministry of the Chemical Industry, 76 plants of the USSR Ministry of the Meat and Dairy Industry, 36 plants of the USSR Ministry of the Foods industry, 98 elevator and silo facilities of the USSR Ministry of Agriculture, and 134 complexes of the Nonchernozem Region of the RSFSR.

The effect is indicative: before the development of the SIDPS, the level of prefabrication of the petrochemical and petroleum refining projects in the USSR Ministry of Industrial Construction was 20%, and by the end of the tenth five-year plan it exceeded 60%. This shift was achieved primarily as a result of the reduction of the volumes of bricklaying and monolithic construction by 1.5 to 2 times. On the projects for agricultural purposes it is still more noticeably: by 3 or 4 times. When building 31 petrochemical and oil refining facilities, unbraced girders spanning 18 and 24 meters and prestressed lattice beams spanning 12 and 18 meters will be used. At a number of the new construction sites of this branch broad use is being made of the construction of multistoried buildings with a grid of columns 12 × 6 and 9 × × 6 meters, box decking, gypsum concrete and reinforced concrete industrial partitions made of heavy and light concrete, asbestos cement 3-layer panels; and 30% of the foundations will be made from piles.

An accelerated production program is being implemented, and industrial partitions for industrial buildings are being widely introduced into construction. A catalog of new types of partitions has been put together, and there are already 30 package installations for their manufacture. By 1980 the volume of all types of industrial partitions will reach 2.5 million m^2, in other words, a fivefold increased. These are predominately reinforced concrete, rolled plaster, reinforced and frame-facing partitions. With the technical cooperation of the NIIZhB [Scientific Research Institute of Reinforced Concrete], we are mastering effective thin-walled reinforced concrete partitions. The Ryazan'stroy construction association has mastered the output of prestressed thin-walled partitions of different sizes; they are two or three times lighter than the traditional ones. The claydite concrete partitions made of M75 type concrete at the Glavvostoksibstroy Main Administration are three times lighter than the usual ones. The Ukrainian SSR Ministry of Industrial Construction has developed the technological documents for the production of prefabricated reinforced cement partitions which are 6 to 10 times lighter than traditional; the labor consumption of their manufacture is 40 to 45% less, and the cost is 35 to 40% lower.

Pile foundations are being widely used at the USSR Ministry of Construction. During this five-year period alone, the pile production volume has tripled.

At the present time, 15% of the foundations of industrial buildings and structures are being erected from piles. A third of the total volume of the piles is made up of such advanced forms of them as pyramidal, thumb pile-columns, piles with nontransverse reinforcing, micropiles and driven piles.

In order to expand the scales of the use of piles and find new solutions, the NIIpromstroy Institution of the USSR Ministry of Industrial Construction jointly with the NIIOSP Institute imeni Gersevanov are constantly conducting scientific research and practical developments. The USSR Ministry of Industrial Construction was the first in Soviet construction to independently organize the production of highly efficient centrifuged columns at the enterprises of the Belorussian SSR Ministry of Industrial Construction, and the first to use them in industrial construction. Their manufacturing technology was developed by the Stroyindustriya Technological Design Office of the USSR Ministry of Industrial Construction. The concrete consumption was reduced by 40-50%, and the steel consumption by 30%; the labor expenditures were reduced to a third of the previous level. An additional effect is also achieved as a result of a 1.5-fold increase in strength of the columns. The working drawings of the centrifuged columns from 3.6 to 19.2 meters long and from 0.3 to 1 meter in diameter were compiled from the one-story industrial buildings with bridge cranes, for trestle supports and high-rise industrial buildings. In addition to Belorussia, the production of such columns has also been mastered by the enterprises of the Ukraine and the Tula oblast. In the 11th Five-Year Plan 12 new shops will make such columns.

The Design Institute No 3 of the USSR Ministry of Industrial Construction (Odessa) proposes the use of reinforced concrete beams and girders with outer sheet reinforcing in construction. In the recommendations of the 7th All-Union Conference on Concrete and Reinforced Concrete it was noted that the development of such products is the most important area of further improvement of reinforced concrete structural elements. The effectiveness of the structural elements with external reinforcing will become more perceptible on enlarging the column grids to 12 × 12 meters in multistory buildings with standardized floor height of 3.3 meters. Here it is expedient to use prestressed steel reinforced concrete beams with external reinforcing which by comparison with the steel beams are 1.45 to 1.6 times cheaper. The degree to which they are completed at the plant is higher; the steel consumption is reduced by 2.5-2.7 times, and the area of anticorrosion and fireproof insulation is decreased by 1.8-4.5 times.

The PI-3 and the NIIpromstroy Institute of the USSR Ministry of Industrial Construction, the TsNIIEP Institute of Training Buildings of the Gosgrazhdanstroy, the NIIZhB Institute and the TsNIIpromzdaniy Institute of the USSR Gosstroy has performed complex studies of reinforced concrete structural elements with external reinforcing. Calculation techniques, the construction principles and the procedure for manufacturing the structural elements have been developed. For one story industrial buildings with column grids of 12 × 18 and 12 × 24 meters, drawings of the beams with a span of 12 meters and a height of 0.8 meters have been developed. The beams are being used in combination with box flooring-airducts and type 2T decking. The application

of this type of flooring lowers the cost of the construction operations by 16% and the maintenance expenditures by 10%; it significantly reduces the labor consumption of the installation and manufacture of the structural elements.

The Tobol'skiy Petrochemical Complex is a clear example of the broad introduction of the effective innovations. The plan calls for the application of spatial rod type structural elements in combination with the shaped flooring the KZhS panel shells 3 × 24, 3 × 18 and 3 × 12 meters in size, the three-layer "sandwich" panels with steel sheathing.

The experience of the Stavropol'khimstroy trust has been instructive, in particular, the method used by them to install heavy equipment by vertical assembly in individual models with subsequent wrapping in the process pipes. The method is especially convenient when installing heavy equipment under the tight conditions of the construction site. Its application offers the possibility of relieving significant crane capacity, reduction of the construction time and reduction of the estimated cost of operations.

An important part of the work of accelerating technical progress and finding new paths is experimental production. A number of experiments have been performed in this area at the construction sites of the ministry. When erecting the main production building of the worsted-textile plant in Nevinnomyssk (the Stavropol kray), a process was worked out for installing the structural element, and the volumetric-planning and structural solutions for the broad two-story building have been checked out. In the construction of the production complex of a cotton spinning mill in Dolina (Ivano-Frankovskaya oblast) an analysis has been made of the technical-economic indexes of the application of box slab coverings. In Mogilev in the construction of the production facility for the finishing plant No 2 of the local silk fabrics combine, new structural solutions have been checked out, and technical-economic indexes have been defined for a single-story, multispan building with column grid of 24 × 6 meters and centrifuged circular columns.

When building the metal products plant in Megeta (Irkutsk oblast) the plan calls for checking out the operation of structural elements with a column grid of 24 × 30 and 24 × 36 meters under seismic conditions. The high speed method of installing the elements with high degree of plant prefabrication has been mastered by the Glavvostoksibstroy Main Administration in the construction of the trico tea plant in Ulan-Ude. The Buryatpromstroy trust turned over this plant for operation a month ahead of time. The level of prefabrication reached 90% here. Everything except the monolithic foundation was installed from prefabricated elements of complete plant preparation. The covering was installed in large modules previously assembled on the ground from light weight structural elements. When constructing the ceilings, "sandwich" panels of light aluminum trusses were used in combination with shaped decking and polyurethane insulation. The walls are erected from claydite concrete panels. The weight of the entire building was decreased by 1.5-2 times by comparison with similar buildings made of ordinary structural elements and materials. This is a far from complete list of projects where structural solutions, manufacturing and insulation technology

have been developed and checked out under operating conditions and the technical-economic indexes of the buildings and structures have been discovered.

We have also made broad, advantageous use of foreign experience. The large-shield interchangeable and interchangeable-volumetric forms borrowed from the experience of the People's Republic of Bulgaria, Romania and the Federal Republic of Germany and used when erecting buildings made of monolithic concrete provid a significant reduction in labor expenditures. The Swedish method of constructing the floors of industrial buildings by vibration evacuation has become widespread at the construction sites. This method makes it possible to increase the productivity of labor by 1.5-2 times. Efficient production of reinforced concrete piles in multiplace, unsplit forms will be organized. The Swedish method of increasing the bearing capacity of piles by reinforcing the ground next to the pile ("piles in a jacket") will also find application. The introduction of advanced Swedish types of pile joints 12 meters long operating under vertical loads provides for an increase in productivity of labor when joining piles 2-3 times. The experience in the application of frame-panel industrial petitions instead of brick will be borrowed from the builders of the German Democratic Republic. It will permit the labor consumption of erecting the petitions to be raised by 5 times (with smaller mass and cost of the products).

The contact with the West German concern "Salzgiter AG" turned out to be useful for us. In 1978 at a symposium we exchanged work experience with this concern and borrowed much value from our colleagues from the Federal Republic of Germany in the organization and technology of constructing the Sheremet'yevo-2 Moscow Airport, in particular, the stamped decking which will be widely used in concrete work in the 11th Five-Year Plan.

The experience of other foreign companies is also being successfully used. In the Soyuzshakhtospetsstroy trust there is a plan for introducing interchangeable decking for tunnel construction. The innovation insures growth of the productivity of labor by 50% and a reduction in the cost of operations by 30 to 40%. Glued wooden arches of the A-type will be used in constructing the ore warehouses of the Novo-Solikalskiy potassium plant. When building the Orshanskiy flax combine in Belorussia, the use of centifuged reinforced concrete columns and piles is planned. With respect to cost and expenditures of labor these materials are 10 to 15% more economical than the ones used at the present time. From Austria we are borrowing the experience in building underground and buried structures and foundations by the improved "wall in the ground" method providing for the following savings (reckoned per square meter of wall): labor expenditure 1.5 man-days, concrete expenditure 0.5-0.8 m^3, steel 10-20 kg. Using the experience of the Hungarian People's Republic, the ministry is planning to organize the production of wall panels and coverings with sheathings of large asbestos cement sheaths with insulation for the construction of agricultural production buildings.

The union of science and production will acquire broader scales in the 11th Five-Year Plan. All of the presently existing long-range target programs will receive futher development. The conversion to flow construction of

industrial agricultural projects of the Nonchernozem Region of the RSFSR will find reflection in the "Flow" program. In the "Contract" program the introduction of the Vinnitskiy method of planning and kit delivery into the consolidated cost accounting brigade will play an important role. The goal has been stated as follows: to bring the number of brigades in the organizations of the RSFSR, Belorussia, Azerbaydzhan and Armenia working by the Vinnitskiy method to 40% and completely convert all of the brigades of the Ukrainian SSR Ministry of Industrial Construction to it. The "Progress" program is oriented toward significant reduction of manual labor. The problem of industrialization of construction on the village level is the basis for the "Monolith" program.

The new long-range target programs are beginning to function: "Stroyindustriya [Industrial Construction]," "Proizvoditel'nost' [Productivity]," "Materialoyemkost' [Material Consumption]," "Kadry [Personnel]," "Nauka [Science]," "Plan," "Mekhanizatsiya [Mechanization]."

In the "Industrial Construction" program provision is made for the organization of production and the introduction of new types of structural elements. In particular, the plan calls for the mastery of the series production of 22 types of them: large-span, "spanning," type P, KZhS slabs, "dynakor" and ZT effective, including centrifuged columns; improved structural designs of the NI-04 series, including columns of 2 to 3 levels; enclosing structures made of light weight materials; industrial partitions.

The development and implementation of measures aimed at improving the productivity of labor will be realized by the "Productivity" program; the measures aimed at lowering the weight of the constructural elements and products will be realized through the "Material consumption" program, for improvement of the professional makeup of the workers and reinforcement of the personnel, by the "Personnel" program and for improvement of planning and to increase the construction efficiency, through the "Plan" program and to improve the level of mechanization, through the "Mechanization" program.

The "Science" program is aimed at joint performance of scientific research and experimental work with respect to long-range agreements with the scientific research institutes.

In order to accelerate the scientific and technical progress in the branch, it is necessary to plan all-around introduction of the achievements of science and engineering. The basis for the planning must be the principle of the model: science-planning-introduction. It is necessary to organize the scientific-technical target programs with respect to a number of the most important problems. Our general goal is to work in an all-around manner, striving together not for individual records, but on the scale of introducing everything advanced. We are obligated to this goal by the new resolution of the Central Committee of the CPSU and the USSR Council of Ministers on improvement of the economic mechanism.

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IMPROVEMENTS IN THE ORGANIZATIONAL AND TECHNICAL LEVEL OF CONSTRUCTION

Moscow PROMYSHLENNOYE STROITEL'STVO in Russian No 2, Feb 80 pp 6-8

[Article by A. I. Shepet'yev, Deputy Minister of Industrial Construction of the USSR]

The implementation of the goals formulated in the resolution of the Central Committee of the CPSU and the USSR Council of Ministers "On Improving Planning and Strengthening the Effect of the economic mechanism on the Increase in Production Efficiency and Work Quality," is giving rise to the necessity for basic changes in the organization of capital construction. The goal is stated of raising the planning and management level, placement of it in accordance with the requirements of developed socialism, achievement of significant improvement and the effectiveness of social production, acceleration of the scientific and technical progress and growth of the productivity of labor, and improvement of production quality. Changes are forthcoming in all elements of the construction process. The main thing is that the basic orientation is changing: instead of the gross product, the central index is becoming the commercial product, the acceptance of finished projects and facilities for operation. In addition, the basic estimating indexes are the growth of the productivity of labor and profits.

In the USSR Ministry of Industrial Construction, an order has been published by which specific assignments to implement instructions contained in the party and government resolutions are defined for all its subdivisions and services.

A good example of an increase in the organizational level of construction is the experience of the Belorussian SSR Ministry of Industrial Construction. The new organizational method of management in the development stage by which this ministry operates is also oriented toward the final construction production in correspondence to the problems formulated in the resolution. On the technological level the essence of the performed measures reduces to the creation of a united continuous flow in order to obtain the maximum annual production.

The entire ministry has been converted to total cost accounting and functions on the principles of self-recovery and self-financing. The only source

of financing is the profits from the work turned over -- the finished commercial product; when allocating the wage fund, only the normative volume of unimproved construction is taken into account. Thus, the main planning and evaluation index is the commercial production.

The planning of the production-economic activity of the ministry is realized on the basis of the five-year plan (with distribution by years), for the customers and the contract workers a continuous two-year planning program has been legalized for the introduction of capacity and facilities. Here the plan is formed so that the totals of the commercial plans for all of the customers of the Belorussian SSR Ministry of Industrial Construction was equal to the plan for this ministry. The transition to complete financing of construction is made.

The work progress in three years of the five-year plan confirms the practical value of the Belorussian experiment. The mean annual growth rates of the commerical production amount to more than 10%; the construction times have been reduced by 16%, the volume of incomplete construction has been reduced to the normative level. The concentration of resources on the construction sites to be started up has been intensified: in 1976, 67.7% of all operations were performed on the site and in 1978, 81.5%. The level of fully prefabricated construction has increased to 74.5%, and 71% of the volume of operations is performed by the brigade contract method. The 11th Five-Year Plan provides for conversion to the Belorussian method of six main construction administrations.

The USSR Ministry of Industrial Construction has developed complex five-year and annual organizational-technical measures aimed at insuring the growth rates of the productivity of labor assigned to the ministry. The central element in them is occupied by the measures to lower the labor consumption of the operations. The results of the long-term target programs are finding specific fruition in the organizational and technical measures. The organizational and technical measures are taken in forming areas: improvement of the administration and organization of labor, improvement of the level of mechanization and prefabrication of construction.

A significant effect in the work to improve the structure of the administration is provided by centralization of the economic planning services of the trust. Such services are already functioning in more than 40 trusts of the ministry. As a result, favorable possibilities are created for more operative solution of the financial planning problems, the engineering preparation of production and reinforcement of the inspection of the work quality. When forming the plans we are making broader and broader use of mathematical-economic models. In the USSR Ministry of Industrial Construction there are about 150 automated control systems capable of solving more than a 1000 administration problems. The most important construction sites are under the control of the automated control systems. In the 11th Five-Year Plan the creation of the ASU-Promstroy industrial construction automated control system including the ASPR will be completed. About 64% of the contract work of the ministry is done with the application of PERT planning.

The advanced system of planning and production-technological kit provisioning of the consolidated construction brigade has been implemented at the Vinnitspromstroy industrial construction combine. The work of the brigade is organized by the annual, quarterly, monthly and ten-day plans clearly coordinated with the plans for production-technological provisioning of the brigade. The brigades are provided with all types of resources through the UPTK of the combine. The transition to the two-element control structure is being realized, and all of the basic economic services are centralized. The results of the changes are that the combine has fulfilled all of the state planning indexes in 3.5 years of the five-year plan.

The most important element in the activity of the USSR Ministry of Industrial Construction is realization of the central long-range target "Quality" program including the set of technical, economic, organizational and social measures to create a quality control system for the final construction product. It is based on the normative base, a number of branch standards. More than 400 quality standards have been developed which encompass all stages of the construction process and the level of its control. The program includes a number of other long-range specialized target programs.

At the present time the USSR Ministry of Industrial Construction has proceeded with the second phase of introduction of the final construction production quality control system. It has been most successfully introduced at the Glavarkhangel'skstroy Main Construction Administration and the L'vovpromstroy Industrial Construction Trust. As a result, the quality of the operations has been improved unservingly. In 1978 the percentage of the industrial construction projects turned over for operation with "excellent" and "good" ratings was 89.5.

The primary direction of the work of the ministry is industrialization of construction. The complete assembly method, large modular installation, installation of complete modular structures with complete process starts for the communications and process equipment are being more and more widely used at the industrial construction sites. For example, the process equipment and the lines for the ELOU-AVT of the Novo-Baku Oil Refinery imeni Vladimir Il'ich were installed in consolidate modules. All of the equipment was installed

as finished assemblies weighing 200 tons each. The heat exchanger modules were mounted in 50 ton elements each. The coverings at the Baku home air-conditioning plant were installed in 24 × 12 meter modules weighing 20 tons. At the Lutskiy blending plant, the conveyor method of assembly and installation of the metal structural elements is being successfully used. The installation unit is the covery module 18 × 12 meters in size weighing more than 40 tons with complete design "starts" for the communications. The assembly and installation rate is 1 to 2 modules a day. More than 90% of the operations have been moved from highup to the ground; 1000 man-days have been saved. The record installation was in Omsk where the petroleum hydrocracking reactor weighing 700 tons was installed in one lift.

The construction of facilities included in the industrial long-range flow construction system (SIDPS) is being expanded. In the 11th Five-Year Plan further light industrial construction sites will be included in it. Altogether the plan calls for using the SIDPS to erect several hundreds of facilities for the national economic plan. This problem is being solved by the Ministry of Industrial Construction of the USSR jointly with the customer ministries, the Ministry of Installation and Specialized Construction of the USSR, and 160 scientific-research and planning and design institutes. The corresponding base of the construction industry is being created simultaneously which is set up to provide these construction sites with new types of materials and structural elements. The complete assembly method of organizing the construction of the industrial complexes will be used when building 250 enterprises.

At the present time the proportion of the fully prefabricated construction in the USSR Ministry of Industrial Construction exceeds 70%. The construction times and the expenditures of labor per million rubles of construction and installation work have been reduced noticeably. In three years of the five-year plan the volume of introduction of the industrial partitions in the industrial buildings have doubled, flooring slabs completely prefabricated at the plant have increased by 1.5 times, and wall panels, by 2.9 times. The volumes of introduction of the steel, shaped decking (27%), stuctural elements and products made of aluminum alloys (40%), shaped glass (37%), and so on have been increased.

One of the basic areas of our work to reduce the material consumption is expansion of the production of light-concrete structures based on artificial porous fillers providing for a reduction in mass of the structural element to 30%. Already now every fourth structural element on the construction sites of the ministry is light concrete. The expansion of the application of such structural elements and their improvement are being accomplished in close contact with the leading institutes of the USSR Gosstroy. In cooperation with the NIIZhB and VNIIST Institutes, we have organized the production of a local porous filler -- Shungisite -- and wall panels made of Shungisite concrete and Shungisite gas concrete (specific weight 1100 to 950 kg/m^3) at the Glavsevzapstroy and the Glazarkhangel'skstroy. In the Tenth Five-Year Plan a number of industrial buildings will be built entirely from light concrete structural elements. With the technical cooperation of the NIISK Institute, the NIIZhB Institute and the TsNIIpromzdaniy Institute, the

Brovarskiy ZZhBI reinforced concrete products plant has mastered the production of the prestressed claydite concrete panels 12 meters long which are 1.5 times lighter than the standard nonstressed ones. These panels are widely used on the construction sites of the Ukraine. At the plant of the ministry in Shelekhov (Irkut oblast) there is a device for the production of panels for light partitions made of claydite concrete and claydite perlite concrete.

The Segezhstroy and Kondopozhstroy trusts have used wall panels of Shungisite concrete, suspended ceilings made of prestressed rolled aluminum sheets, glass reinforced concrete panels for the first time in the practice of erecting large industrial buildings (the Segezhskiy and Kondopozhskiy cellulose and paper combines). Bearing elements made of claydite concrete have been successfully used by the Kremenchugstroy construction combine, and it has also used the light concrete, double-pitch beams in the covering of the main building of the Poltava bakery. The weight of the covering was cut almost in half, and the concrete consumption was reduced by 21%, steel consumption, by 15%. The slabs and beams were developed by the Kiev Institute Ukrgipropishcheprom jointly with the NIISK Institute of the USSR Gosstroy and the NIISMI Institute. The Technological Design Institute of the USSR Ministry of Industrial Construction has developed a design for an experimental-industrial plant to produce ceramic filler for concrete. The shop will make ceramic granules to replace rubble. By the proposed process the initial product can be made from clay, clayey loams and loesses. The cost of 1 m^3 of this filler is 7.8 rubles. The capacity of the shop is 100,000 m^3 of product per year.

The experience of the Volgograd industrial structural elements combine of the Zhelezobeton reinforced concrete production association of the Glavnizhnevolzhskstroy Main Administration for the manufacture of reinforced concrete prestressed braceless trusses spanning 24 meters, series 1.463-3 for the coverings of industrial buildings with sloping roof. On the equipment used by the Volgograd people it is possible to manufacture braceless trusses of all types and sizes in one form, using replaceable inserts and sides. Here, the productivity of labor has been increased significantly, the consumption of reinforcing steel and concrete has been reduced significantly, and the quality of the structural elements has been improved. The application of such trusses in construction offers the possibility of more efficient use of the space between trusses for communication lines. The braceless trusses are also convenient for buildings with a saturated network of transport conveyors or beam cranes suspended from the trusses. The cost of 1 m^3 of braced trusses (FS-42-10;) is 122.61 rubles, and braceless trusses, 107.31 rubles.

The USSR Ministry of Industrial Construction jointly with the design institutes of the country has organized the construction of industrial projects entirely from claydite concrete. Such facilities have been erected by the Glavnizhnevolzhskstroy Institute and the Glavsrednevolzhskstroy Main Administration. The weight of the buildings, the material consumption, labor consumption and transport expenses have been reduced significantly here. In the 11th five-year plan the production of prefabricated reinforced concrete

is increased greatly by 14%, and almost every third cubic meter of it will be light concrete which will permit significant lightening of the weight per cubic meter of structural elements.

The base of the construction industry of the ministry at which we shall direct the greater portion of the capital investments will be reconstructed, expanded and reequipped. As a result, the nomenclature of the products will be renewed. The plan calls for the creation of new farm construction combines (SSK), specializing them in the production and installation of industrial structures. Unfortunately, in connection with the restriction by the USSR Gosnab of the deliveries of a number of materials, we are slowly developing the use on the sites of such advanced construction means as built-up ruberoid, shaped steel decking and sandwich panels.

The industrialization of construction requires the development of mechanization. The USSR Ministry of Industrial Construction has at its disposal a powerful fleet of construction machines and the maintenance and repair base. The mechanized procedure in the ministry is used to perform more than 900 million m^3 of earthwork and more than 10 million m^3 of concrete work, almost 200 million tons of loading and unloading operations. About 50 million tons of the structural elements have been installed. Annually at the ministry plants effective means of mechanization in the amount of 200 million rubles are manufactured. Among them are about 1500 machines and equipment for earth work and pile construction, 4000 for finishing work, 500 for concrete operations and 700 for roofing operations, and 1300 loading machines. These include tower cranes, concrete layers, concrete pumps, pile drivers, plastering and painting units, the sets for installing floors by the vibration evacuation method, 2 and 3 level mills, special transport units, and the standard sets. About 22% of all the brigades are using brigade standard sets on dozens of types of construction and installation operations.

The organizational forms of controlling the fleet of construction vehicles are being improved. At the present time the USSR Ministry of Industrial Construction has 22 mechanization trusts and 18 intertrust mechanization administrations. Sixty-two percent of the fleet of primary machines and vehicles are concentrated in them. The concentration and specialization of the technical equipment and repair of machinery are increasing their production by 15 to 25%. The intrashift idle time of the equipment in the mechanization trusts is 2.5 times less than in the general construction trust. In the Omsk, Ufa and Kazan mechanization trusts the machine fleet is most efficiently set up.

The sphere of use of the system of centralized technical servicing of machines (TsTO) in which all maintenance is realized by a special brigade at the nonoperating time for the machines is being expanded. This system is being used in 154 mechanization administrations of the USSR Ministry of Industrial Construction. The concentration of equipment in the mechanization trusts is creating the best conditions for the application of advanced processes of minor repairs by the unit-assembly method, and major repairs, by the flow-assembly method. The operative management of the mechanical repair

plants is realized through the ASU-SORM automated control system. This has noticeably improved the use of their production capabilities.

The system for outfitting the construction sites is being improved. At 209 trusts instead of the offices of material and technical supply, resources are provided through the UPTK. In 75 of the trusts, standardized process normative documents have been introduced. In order to improve the engineering preparation of production, the finishing and the completion of products at the UPTK bases, containerization of the products and delivery of them to the sites by specialized transportation are being organized everywhere. In three years of the five-year plan the volume of finishing work on the products has reached 60%, and 30,000 containers have been built. The containerization and palletizing are provided for 40 to 60% of the kit-delivered products.

In the 11th Five-Year Plan provision is being made for the organization of the all-around production of structures in the interoblast combines. In them the plan calls for the production of sets of products for prefabricated industrial buildings, effective prefabricated reinforced concrete structures for the enterprises of the light, foods, meat and dairy industry, sets of products for agricultural complexes.

By the "Progress" program, the new five year plan provides for significant improvement of the productivity of labor by reduction of manual labor. Thus, as a result of the broad application of the "dry" methods the plan calls for a great increase in the work output of the finishers. The use of these methods will also provide a significant savings of fuel and energy resources. A large percentage of the roofs are to be made from built-up ruberoid. For this purpose, the ministry enterprises will manufacture dozens of units to produce this material, the use of which will permit 40% mechanization of the roofing operations. The productivity of labor in the concrete operations will be raised significantly by mass equipment of the brigades with concrete pumpers in combination with the concrete mixer truck.

The broad use of additives of S-3 superplasticizer will increase the convenience of pouring the concrete mixes and will cut the labor consumption of this process by four times, and it will also decrease the cement consumption.

The course has been set for larger scale introduction of the economical method of operation and improvement of the use of high-output equipment. In particular, the method of digging a single pit when building foundations used at the Neftestroy trust No 16 is prospective. It is expedient to dig such a pit for a large number of foundations at a site. A broad operations front is opened up, the conditions of handling the technical means are improved. The volume of manual labor is reduced sharply, the productivity of labor is increased by 25 to 30%, the output of the earth working equipment and motor transportation is increased by 15-20%.

The USSR Ministry of Industrial Construction has created a number of innovations mechanizing manual labor. Among them is the Salyut plastering set

which operates on rigid mortars. The number of operations is reduced from 12 to 4, the output per worker reaches 50 m^2 per shift. The UKrorgtekhstroy Institute has developed an advanced process for painting operations based on the application of an all-purpose, high-output ANSh unit, by means of which the spachtling and the painting compounds are applied in one operation. Accordingly, the productivity of labor is increased by 5 or 6 times.

The program planned for the 11th Five-Year Plan to reduce the labor consumption of construction provides for the release of thousands of workers by increasing the degree of prefabrication and plant readiness, the introduction of new advanced materials and structural elements. The proportion of the construction from large-sized elements, assemblies, panels and modules completely assembled is to be increased; more than half of the brigades will be equipped with standard sets. By mechanization it is proposed to relieve a large number of workers.

The persistent reduction in the proportion of manual labor and the increase in its productivity based on all-around mechanization of production, the basic improvement of the organization of capital construction -- these are the guarantee of successful fulfillment of the assignments facing the collectives of the USSR Ministry of Industrial Construction in the final year of the five year plan.

10845
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NEW APPROACH TO THE DESIGN AND CONSTRUCTION OF INDUSTRIAL BUILDINGS

Moscow PROMYSHLENNOYE STROITEL'STVO in Russian No 2, Feb 80 pp 44-46

[Article by S. N. Bulgakov, Candidate of Technical Sciences, Board Member of the USSR Ministry of Heavy Construction]

The USSR Ministry of Heavy Construction is purposefully and in a planned way implementing the technical policy of all-around improvement of the planning, design and construction of industrial buildings. For this purpose a system of measures of an organizational and technical nature is applied which includes the following: the construction of large interoblast enterprises of the construction industry to produce new advanced construction materials and structural elements; broad introduction of the advanced, light building materials and structural elements; the development of new volumetric planning and structural solutions of one-story industrial buildings based on the principle of separate operations of the structural and process parts of the building; constant improvement of the process and organization of construction using computers and automated control systems.

Within the ministry capacity has been created for the construction of 20 million m^3 of reinforced concrete structural elements, 10 million m^3 of carpentry products, more than 4 million m^3 of porous fillers and other production facilities which in practice provide for the demand of the construction organizations subordinate to the ministry for products in the basic nomenclature.

Along with the further development of the capacity of the enterprises to produce traditional structural elements and materials, large interoblast enterprises are being created within the ministry for the production of new advanced construction elements and materials.

In Chelyabinsk, a plant has been put into operation for light, wall and roofing structures based on shaped steels sheets with long-term protective coating with a capacity of 5.5 million m^2 per year. In Khabarovsk, the process lines are being produced for manufacturing such structural elements in the amount of 3 million m^2 per year. The construction of the plant for all-around light metal structures which jointly with the plant for shaped decking will insure all-around delivery of all types of bearing and enclosing structures

with a high degree of plant prefabrication for the construction of industrial buildings with an area of 4.5 to 5 million m^2 per year is being completed in Pervoural'sk.

In order to increase the industrialization of construction, the USSR Ministry of Heavy Construction has taken measures to create capacity to reduce the elements of frame-panel partitions. For this purpose, a plant will be built in Chelyabinsk with a production capacity of 6 million m^2 per year of fiber gypsum board combined with the framing elements and fastenings for constructing inside walls, partitions and suspended ceilings. In addition, measures have been developed and are being implemented to organize the output of 3 million m^2 per year of improved plaster at the Rostov gypsum plant.

The ministry has created the capacity for the production of effective insulating materials, including the production of mineral wadding slabs of increased rigidity in the amount of 120,000 m^3 and phenol foam plastic in the amount of 175,000 m^3.

For the first time in the country, the Kommunarskiy plant has mastered the production of mineral wadding slabs of increased strength from the hydraulic mass based on synthetic binder on Soviet equipment. At this plant the capacity will be finished for the production of slabs with increased rigidity using synthetic binder to 180,000 m^3 and based on bituminous binder to 120,000 m^3. The construction of analogous plants in Chelyabinsk with a capacity of 240,000 m^3, Rostov-na-Donu, 90,000 m^3, shops in Yakovlevo of Belgorod oblast for 105,000 m^3 and Cherepovts for 62,000 m^3 of slabs per year will be completed.

Six particle board plants using imported equipment with a capacity of 18,600 m^3 each in Nizhniy Tagil, Krasnoyarsk, Chelyabinsk, Belgorod and Pavlodar are in the final stage of construction. With the introduction of these enterprises into operation, the total capacity with respect to the housebuilding enterprises will be 340,000 m^3, which completely meets the demands of the ministry organizations.

Thus, the USSR Ministry of Heavy Construction has solved the principal condition of realizing a qualitative shift in the improvement of industrial construction -- a powerful base has been created for the production of light, effective structural elements and materials.

The ideas of all-around improvement of the planning, design and construction of industrial projects, known for a comparatively long time, could not and cannot reach actual fruition without the creation of such a production base.

The presence of such capacity in the USSR Ministry of Heavy Construction already now is permitting the solution of the problems of the broad introduction of light, advanced construction materials and structural elements, and the transition to qualitatively new effective design solutions of the industrial buildings.

The technical administration of the USSR Ministry of Heavy Construction jointly with Giprometz, Tsellpromzdaniy, Goskhimproyekt and Promstroynilproyekt Institutes has developed the technical conditions for the application of the above enumerated advanced structural elements and materials and also such advance structural elements as the KZhS slab-sheathings with span dimension, the complex covering slabs, volumetric-modular built-in facilities, prefabricated industrial partitions, multistory, unsplit reinforced concrete columns of M500, M600, M700 and M800 type concrete in the buildings being built for the enterprises of ferrous and nonferrous metallurgy, machine building and chemical production.

In the first three years of the Tenth Five-Year Plan 135,000 tons of shaped steel decking, 750,000 m^2 of three-layer wall panels and 1,200,000 m^2 of roofing panels with foam polyeurethane insulation were introduced.

This made it possible to find a new solution to the enclosing structures of industrial buildings which, in addition to their direct structural and functional purpose, determine the architectural appearance of the projects.

The application of shaped, galvanized steel sheets with polymer coating and paint of the "veresakor" type insures their operation under conditions of increased aggression for up to 25 to 30 years, it lends the buildings an industrial appearance and improves their aesthetic qualities as a result of the application of a broad range of colors of the outside wall panels.

The application of the new, light efficient structural elements will to a significant degree permit reduction of the labor expenditures, the material consumption, the transport expenditures, the productivity of labor and in a number of cases the cost of construction as opposed to the traditional design solutions.

Thus, with respect to the oxygen converter shop of the Azovstal' Metallurgical plant, the application of these structural elements made it possible to lower the estimated cost by 890,000 rubles, the installation labor consumption by 15,500 man-days, the weight of the structural elements by 40,500 tons, the cement consumption by 663 tons, and the overconsumption of steel was 87 tons.

The application of light weight structural elements when building a pipe rolling mill at the Northern Pipe Plant made it possible to install walls and coverings in large modules up to 400 m^2 inside, and the internal built-in facilities, in three-dimensional elements of complete plant prefabrication. The shop 100,000 m^2 in area was installed in 8 months.

The built-in facilities made of three-dimensional elements or large flat panels create a modern architectual appearance of the interior of the production building, comfortable working conditions for the operators, and, the main thing, they reduce the time and labor expenditures at the construction site for their erection by 8 to 10 times, for they have high flat prefabrication, they are delivered to the site with installed sanitary engineering and

electrical engineering equipment, and after installation they only need connecting to the main networks.

The application of 6 million m^2 of fiber plasterboard and 3 million m^2 of dry gypsum plaster with improved quality made the following possible: reduction of labor expenditures on construction by 0.7 million man-days per year; reduction of the weight of the structural elements by 300,000 tons per year; the annual cost benefit for the application will be 35 million rubles.

The partitions have the following indexes per square meter: steel consumption 2.1-3.1 kg, weight 3.2-4 kg, cost 3.89 to 4.49 rubles, labor expenditures on installation 0.87-1.06 manhours. The partitions made of small piece materials are 40 and more times heavier, and they are 2 to 5 times more labor consuming.

The covering slabs of complete plant prefabrication -- complex slabs, provide a labor savings at the construction site of up to 18 man-days per 1000 m^2 of building. The application of KZhS in construction and also P and 2T slabs permits the consumption of metal per m^2 of production area to be reduced by 4.9 kg and concrete, 0.06 m^3; it permits a significant increase in the area of the installed unit of covering, at the same time lowering the expenditures on installation, and making better use of the load capacity of the cranes.

A significant effect is provided by the application of light insulation, steel structural elements made of bent profiles and other advanced structural elements and materials.

However, many years of experience in the erection of industrial buildings with the application of light advanced structural elements and materials permits the conclusion to be drawn that under the conditions of traditional design solutions the effect from the application of light structural elements is basically achieved only in the construction of these structural elements themselves, and it is felt to a significantly lower degree in the overall material consumption, labor consumption and cost of the buildings and structures as a whole. The greatest effect from their introduction can be obtained in the case of all-around improvement of the structural and the volumetric-planning solutions of the industrial buildings.

In the USSR Ministry of Heavy Construction, active searches are being made for effective design solutions for single story industrial buildings based on the principle of separate operation of the structural and the process parts of the building with the use of light supporting and enclosing structures.

One such area is the creation of mixed industrial building designs where it is possible to use light enclosing structures made of shaped steel sheets in combination with light reinforced concrete framing. This permits the metal consumption to be reduced by comparison with the ordinary metal structural elements from 120-150 to 75 kg, and the wieght (by comparison with reinforced

concrete versions) to be reduced from 450-500 to 130 kg per square meter of production area.

At the present time the light-frame structural elements are being used in the construction of the Azov canned products combine with a production area of 100,000 m^2, the structural aluminum construction elements shop in Avdeyevka of Donets oblast, the reinforcing frame shop in Novokuznetsk, and the mechanization base in Rostov-na-Donu.

At the Tula Promstroyproyekt, work is being done to create new volumetric-planning and structural solutions for single-story industrial buildings for the reinforced concrete shops, the large-panel house building and the mechanical repair plants made of light structural elements without the transfer of crane and other process loads to the frames of the industrial buildings. The first design developments have confirmed the effectiveness of the implementation of the principle of separate structural solution for the structural and process parts of the industrial buildings. The transition to conveyor technology and the floor lifting and transport means instead of bridge cranes in all or the greater part of the prefabricated reinforced concrete shops and also the application of light structural elements have lowered the material consumption, the cost and labor expenditures in the construction sphere per m^2 of building area by comparison with the effective standard designs for cement by 38.5%, for steel by 29.5%, and with respect to cost by 30.7% and labor expenditures, more than 30%. The application of the floor type lifting and transport means significantly lowers the operating expenditures, for in this case the structural volume of the buildings is sharply reduced. The height of the standard buildings with bridge cranes equal to 12.6 meters is reduced to 7.2 meters, and the construction volume is reduced by 43%.

Considering the prospectiveness of the new area with respect to all-around improvement of planning, design and construction of one story industrial buildings without transfer of the process loads to the structural elements of the building frames, including crane loads, at the Presidium of the Scientific and Technical Council of the USSR Ministry of Heavy Construction, in 1980 the decision was made to carry out design developments with respect to 2 or 3 representative projects for the basic branches of industry.

As a result of this version type design, efficient areas of application of the principle of separate construction of the structural and process parts of industrial buildings for different purposes and the effectiveness of such volumetric-planning solutions with simultaneous broad application of light materials and structural elements must be determined.

When preparing the versions of the existing standard or standard and new engineering designs with respect to each project and even branch it is possible to obtain data on the reduction of the total material consumption, including metal consumption, labor consumption, reduction in mass and cost of the building.

The problem of determining the effect of the new engineering solutions on the reduction of the construction time for industrial buildings is

appreciably more complicated. Now the actual times with respect to individual projects are compared with the analogs. In other cases, we arrive at the index of reduction of time through the index of reduction of labor expenditures. Both procedures are relative.

At the present time the USSR Ministry of Heavy Construction, the TsNIPIASS and the NIIOUS Institutes are working jointly on the creation of the procedure and the program for automated computer estimation of the effect of the introduction of new engineering designs on the time required to erect industrial projects. The result of this work must be the dialog type automated system capable of answering the question of the effect of the structural designs used on the duration of construction of the given project during the planning and design process and in the stage of erection of the facilities when the engineering designs are changed.

The solution of this problem must promote optimal use of resources and intensification of construction output.

10845
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VACATION RECREATIONAL RESORT FACILITIES DISCUSSED

Problems With Contractors

Moscow TRUD in Russian 15 Mar 80 p 2

[Article by V. Antonov: "Accelerate the Construction of Health Resorts: The AUCCTU [All Union Central Council of Trade Unions] Conference"]

[Text] Yesterday, a conference was convened in the AUCCTU Palace of Labor devoted to the construction of trade union structures. Administrative workers in trade union councils, central councils for the administration of health resorts and for tourism and excursions, the AUCCTU Main Administration of Capital Construction, local subdivisions and representatives of the ministries took part in its work.

The participants in the conference discussed the results of fulfilling the plan for last year and the current tasks which resulted from the decisions of the November 1979 CPSU Central Committee Plenum and the speech at the plenum by General Secretary of the CPSU Central Committee L. I. Brezhnev.

A. P. Ushakov, secretary of the AUCCTU, gave a report on this problem. He noted the successful work done by individual construction organizations which put sanitorium-health resort and tourist facilities which can accommodate 20,700 places, as well as 19 clubs and cafeterias for 11,000 people, while exceeding the plan for construction of the Olympic structures in Moscow.

However, these achievements could have been greater. Contract organizations did not assimilate 25 million rubles and were not able to put 4,800 locations into operation. The USSR Ministry of Industrial Construction only fulfilled 78.7 percent of the yearly plan for trade union structures. How do contractors think they can correct the situation? Unfortunately, the facts and figures testify to the fact that positive progress is still not noticeable. During the first 2 months of the current year the Ministry of Industrial Construction fulfilled 10 percent of the plan, the USSR Ministry of

Construction--11.2 percent, the Ministry of Construction for Heavy Industries Enterprises--10.4 percent, the USSR Ministry of Energy--7.8 percent, and the USSR Ministry of Transport Construction--6.8 percent.

Citing this data, the speaker drew the conclusion that many administrators of contract organizations, administrations and divisions of capital construction and trade union soviets are not taking the necessary measures to put an end to this lag.

A majority of speakers at the conference were also compelled to acknowledge this. I. Poyda, secretary of the Ukrainian Republic Council of Trade Unions, said that at the Truskavets health resort, where the plan to start the initial operation of the resort hotel was disrupted, does not have a sufficient number of workers and work has practically ceased on the cafeteria. Matters are not faring much better at the "Odesspromstroy" combine. Since last year the cafeteria at the Kuyal'nik health resort here was not completed on schedule along with the sleeping quarters with accommodations for 1,000. Speaking at the conference, V. Vepritskiy, director of the combine, promised to make up for lost time but did not give convincing explanations for the poor work. Ya. Godysh, director of the Main L'vov Industrial Construction Administration, and V. Pushchev, director of the Main Minsk Health Resort Construction Administration, made similar statements.

V. Borodin, vice-chairman of the Central Council for the Administration of Trade Union Health Resorts, showed with convincing examples what losses our state is suffering due to the health resort construction which has dragged on for many years. No one is surprised any longer about the existence of any construction work which has been going on for 10 to 15 years.

Justifiably criticizing the contractors, the participants in the conference expressed quite a few reproaches in addressing the clients as well. L. Bibin, USSR deputy minister of Construction, spoke about the imperfections in design work and the late preparation of technical documentation. N. Sumerskiy, chairman of the Yaroslavskaya Oblast Council subjected the administrators of "Soyuzkurortproyekta" to sharp criticism. But the director of this design organization, S. Yusin, having gone up to the rostrum, made some figures public from which it appeared that the organization which he supervises overfulfilled last year's plan for all categories.

Leading builders spoke at the conference. They justifiably complained that conditions have not been created for introducing the brigade contract method and that there is no real concern for their everyday needs. A. Zaytsev, USSR deputy minister of Industrial Construction, A. Abukov, deputy director of the Central Soviet for Tourism and Excursions, V. Gulenkov, deputy director of the Main Administration of Capital Construction, and others also spoke.

Socialist commitments for 1980 by construction organizations, industrial enterprises, and trade union soviets and committees were adopted at the meeting.

Results, Lags

Moscow STROITEL'NAYA GAZETA in Russian 14 Mar 80 p 2

[Article by V. Gulenkov, deputy director of the Main Administration of Capital Construction in the AUCCTU: "Trade Union Health Resorts--On Time"]

[Text] The results of the work of construction organizations for the two months of 1980 indicate that definite success has been achieved during the construction of many health resorts. But in addition to this, the proper manner of working has not been displayed at a number of construction sites, including starting sites as well.

The USSR Ministry of Industrial Construction has met 9.9 percent of the annual plan during the past period.

USSR Ministry of Construction	--11.2
USSR Ministry of Construction of Heavy Industry Enterprises	--10.4
Main Moscow Oblast Construction Administration	-- 6.5

Among those that lag behind the most in the results for January and February are the Main Volga Construction Administration (director of the main administration--I. Lavrukhin), the Tadzhikistan Ministry of Construction (minister--M. Sharipov), the Tambov Administration of the USSR Ministry of Construction (director--B. Kaluzhin), the Main Kuznetsk Coal Fields Construction Administration (director of the main administration--S. Astashov), the Main Far East Construction Administration (director--V. Peschanskiy), the Main Northern Caucasus Agricultural Construction Administration (director--A. Kudryavtsev), the Main Western Urals Construction Administration (director--L. Lipatov), and the Main Stavropol' Industrial Construction Administration (director--P. Mal'tsev).

A large and crucial task stands before builders of trade union health resorts in 1980: 308 million rubles of capital investments need to be assimilated, a significant portion of which is to be directed towards starting sites. This will accelerate the initial operation,

reduce unfinished construction and will make it possible to put sanitorium-health resorts and tourist buildings into operation in almost 30,000 locations. And an additional half million plus people will receive vacations to sanitoriums, resort hotels, holiday homes, and tourist centers.

The sketch which we are publishing today, and on which only the principal starting sites are represented, shows that health resort construction is going on not only in the traditional health resort regions of the south but also in Siberia, the Far East and Nechernozem --in all places where there are natural medicinal factors. Conditions are being created for people to have rest and therapeutic treatment in the zones where they live.

Key:

A. Sanitorium-Health Resort Sites

1. Leningrad
2. Arkhangel'sk
3. Yaroslavl'
4. Kineshma
5. Mendeleyevsk
6. Tallin
7. Riga
8. Vilnus
9. Minsk
10. Truskavets
11. Kiev
12. Chernovtsy
13. Kishinev
14. Odessa
15. Pitsunda
16. Sochi
17. Yerevan
18. Armavir
19. Tbilisi
20. Zhelezhnovodsk
21. Kislovodsk
22. Stavropols
23. Makhachala
24. Astrakhan'
25. Baku
26. Tambov

B. Tourist Hotels and Centers

27. Cheboksary
28. Kuybyshev
29. Aktyubinsk
30. Ashkabad
31. Tashkent
32. Dushanbe
33. Frunze
34. Alma-Ata
35. Novosibirsk
36. Krasnoyark
37. Yuzhno-Sakhalinsk
38. Vladivostock

Certain construction organizations have made an excellent start and have successfully managed the two month tasks. These are, most of all, a subdivision of the USSR Ministry of Agriculture (minister--S. Khitrov), the Belorussian Ministry of Agricultural Construction (minister--V. Danilenko), the Azerbaijan Ministry of Agricultural Construction (minister--D. Asanov), and the Main Central Agricultural Construction Administration (director--P. Kuznetsov). Collectives of the Moldavian Ministry of Construction (minister--V. Zbarazskiy) and the Main Altay Construction Administration (director--I. Kapeliovich) are doing fine work at health resort construction sites.

A subdivision of the Main Leningrad Construction Administration (director--O. Zibrov) is increasing its pace of work. Construction workers of Trust No 16 in the Main Leningrad Construction Administration have taken on the commitment to turn over the tourist hotel with accommodations for 1,000 in Leningrad ahead of schedule and with excellent quality.

The Main Upper Volga Construction Administration, the Smolensk Construction Administration and a number of other subdivisions have improved their work at trade union construction sites. The tasks for the 1980 Olympics' construction sites were also overfulfilled.

However, the results from the two months of this year indicate that the principal general contract ministries and departments--the USSR Ministry of Industrial Construction, the USSR Ministry of Construction, the USSR Ministry of Construction of Heavy Industry Enterprises--have worked below their capabilities at the sites.

As is evident from the summary, the USSR Ministry of Industrial Construction managed only 9.9 percent of the plan for the year during the two months. And its subdivisions have to assimilate 45 million rubles during the current year, put into operation 13 sanitorium-health resorts and tourist buildings and most of all those health resorts which were not turned over during the past year. How do matters stand with them?

During the past year a resort hotel in Truskavets with accommodations for 1,000 people was not turned over. And at present no progress is evident. During the two months only seven percent of the quota of work for the year was accomplished. Instead of 350 people required by the schedule, only 270 are working. The problems of supplying finish tiles and granite have not been solved. It is thought that the administrator of the Drogobych industrial construction trust, M. Bronskiy, did not draw the proper conclusions from last year's errors.

The state of affairs at other sites that have not been completed on time also arouses anxiety. These are the sleeping quarters at the sanitorium imeni Gor'kiy in Kislovodsk (SMU [Construction and Installation Administration] Trust No 17 of the Kislovodsk Construction Administration, director--Z. Lerman), the "Usinskaya" tourist center in Kuybyshev Oblast (Trust No 4 of the Main Central Volga Construction Administration, administrator--S. Kostylev), and the Svetlana resort hotel in Sochi (Trust No 3 of the Main Sochi Special Construction Administration, director of the main administration--E. Taranovskiy, administrator--V. Pugachevskiy).

During the current year the sleeping quarters, which can accommodate 1,000 people at a time, at the Kuyal'nik health resort near Odessa should be filled. But the building is not completely finished with construction materials, it is not glazed and there is no heat in it. The Odessa Industrial Construction Combine (director--V. Vepritskiy) did only seven percent of the quota of work for the year in two months.

A USSR Ministry of Industrial Construction board reviewed the problem of constructing trade union structures jointly with the Trade Union Central Committee. Measures are being contemplated to accelerate work.

A no less complex task stands before the collectives of the USSR Ministry of Construction--they have to assimilate 31 million rubles and put 9 sites into operation.

The "Kemeri" sanitorium in Latvia is one of the long term construction projects in the Baltic region (it has been under construction since 1969), but the Yurmala Construction Administration (administrator--N. Mar'in) is still not even hurrying to prepare the site to be turned over.

The Industrial Construction Trust (administrator--P. Novosel'tsev) has practically not begun work on the sleeping quarters of the Khodzha-Obi-Garm health resort in Tadzhikistan. A similar situation also exists at the tourist center near Tambov (contractor--Tambov Administration, director--B. Kaluzhin).

Organizations in the USSR Ministry of Construction of Heavy Industry Enterprises must make a large contribution toward the development of trade union health resorts. They must assimilate 25 million rubles during the current year and put sanitorium-health resorts and tourist facilities into operation in Siberia, Kazakhstan and Sakhalin. But the work of many construction organizations leaves much to be desired. During the current year the Aktyubinsk Housing Construction Trust (administrator--P. Bondarenko) did not turn over the tourist hotel in Aktyubinsk. The start of operations for it during the second

quarter of the current year remains, as before, under the threat of disruption. Only 30 persons are working at the site. Since November, work has practically ceased on the "Sinegorskiye Mineral'nye Vody" sanitorium in Sakhalinskaya Oblast (Main Far East Construction Administration, director of the main administration--V. Peschanskiy). In February, construction work also came to a halt on the sleeping quarters at the "Ozero Uchum" health resort in Krasnoyarskiy Kray (the Achin Housing Construction Administration, administrator--V. Kikhoy).

The quiet at the starting structures of the Main Vladivostock Construction Administration (director of the main administration--A. Bakhteyev)--the sanitorium buildings at the Shmakovka and Sadgorod health resorts in Primorskiy Kray--is depressing.

The results of two months indicate that not all administrators of contract organizations are analyzing their work in a proprietary manner during the current year in order to eliminate old mistakes. Not everyone regards the end result--the initial operation of the sites--as of paramount importance. Unquestionably, much time has slipped away, but just the same, it is possible to correct the situation at health resort construction sites. Competition according to the principle of a "workers' relay race" and widespread use of the brigade contract method can be of great assistance in fulfilling the plan.

The guilt of the clients must not be underemphasized. The capital construction administrations and divisions of the trade union soviets at times do not give sufficient attention to health resort sites, do not maintain control over their construction and do not help to bring out potentials. The working conditions and relaxation that are necessary for construction workers have not been created at a number of sites.

The most favorable period for construction workers has begun. All participants in the construction of trade union structures are called on to ensure the smooth pace of work at starting sites.

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URBAN DEVELOPMENT IN SIBERIAN, FAR EASTERN CITIES VIEWED

Urban Development, Architecture

Moscow ARKHITEKTURA SSSR in Russian No 2, 1980 pp 1-3

[Article by D. Khodzhayev, Member of the Board of the USSR Union of Architects and Deputy Section Chief of USSR Gosplan: "Economics, Urban Development, Architecture"]

[Text] The USSR's national economy has entered upon the concluding year of the 10th Five-Year Plan. The State Plan and Budget for 1980 have been approved. With great satisfaction the Soviet people have greeted the decisions of the November 1979 Plenary Session of the CPSU Central Committee and the directives contained in the speech at that session by the General Secretary of the CPSU Central Committee and Chairman of the Presidium of the USSR Supreme Soviet, Comrade L. I. Brezhnev.

Of exceptionally great importance for our country's further successful economic and social development is the decree of the CPSU Central Committee and the USSR Council of Ministers, "On Improving the Planning and Strengthening the Influence of the Economic Mechanism on Increasing Production Efficiency and Work Quality." These documents direct all administrative and planning activities at the attainment of high end results for the national economy, at the maximum rational utilization of all our potentials and resources, and at the widespread introduction of scientific and technical achievements and progressive experience.

Soviet workers, including urban builders and architects, are faced with a responsible assignment--to profoundly study the decisions which have been taken and to draw practical conclusions from them.

One of the most important directions for improving planning is the creation and development of an integrated, interrelated system of long-term, five-year, and one-year plans, and on this basis the achievement of continuity in planning. This system of plans includes a comprehensive program of scientific and technical progress for 20 years, the fundamental trends of the country's economic and social development for 10 years (these plans are continuous in nature and are subject to refinement and extension every five years), as well as five-year and one-year plans.

The introduction of an interrelated system of plans and the determination of a procedure and time periods for working them out have created the possibility, essentially important for the development of urban construction, of a complete coordination between the system of urban construction planning and the system of state economic and social planning. The time has come to abandon the tempting but completely unrealistic and scholastic proposals to work out general plans for our cities, looking ahead to the remote future of 50 years or more; these still appear quite often in the pages of our architectural press.

It is obviously feasible to establish a 20-year estimate period for the draft general plans of our cities' development (this does not preclude the fact that they may include forecasts of possible territorial development for a more distant time period), as well as two intermediate time periods--the five-year (first stage of construction), which will have a bearing on the real and stable tasks of the regular five-year plan, and the 10-year, corresponding to the Basic Trends of the country's economic and social development for 10 years.

Analogous refinements should be introduced into the procedure along with time periods for developing the schemes and drafts of rayon-level planning, as well as other types of draft-plan documentation. In our opinion, it is necessary to legitimize the time periods for adjusting and extending the various types of long-term draft-plan documentation; this will allow us to take into consideration, not in a happenstance manner but in a well-planned and operational way, the latest achievements of scientific and technical progress in the development of an urban-design base for cities and rayons as well as directly in the field of urban construction.

Everything stated above requires substantial adjustments and supplements to the standard specifications which are operative in the field of urban construction.

It would be feasible for the State Committee on Civil Construction and Architecture under USSR Gosstroy and the Gosstroys of the Union republics to organize this work more rapidly, attracting sub-departmental as well as other interested scientific-technical and planning organizations so that by the beginning of the 11th Five-Year Plan there would be ready for implementation a new system of urban-construction planning, completely coordinated with the system of planning.

No less important for the development of urban construction and architecture is the strengthening of the role of the five-year plan as the chief form for planning the country's economic and social development and as a basis for organizing economic activity. Being provided for, beginning with the 11th Five-Year Plan, is the affirmation of a stable five-year plan for capital construction (with a distribution of the assignments over the years), balanced with material, labor, and financial resources, and the capacities of the construction and installation organizations. The local Soviets of People's Deputies

have been entrusted with the task of drawing up and approving consolidated plans for housing and community and cultural-domestic construction and supervision of the execution of the indicated plans.

Thus, on the one hand, the architect-urban builders in each oblast, kray, autonomous republic, and city will acquire a stable basis for the rational solution of architectural-urban construction problems, not for one year nor for two, but for five years. i. e., for a time period sufficient to carry out major urban construction projects. On the other hand, there is an abrupt growth in their responsibility. The absence of or delay in compiling a detailed, thoroughly thought-out five-year plan for the distribution of urban construction, the late working out of plan documentation with regard to the construction projects of the coming year (which now must be approved no later than 1 July) may lead to serious cost outlays in building up our cities, settlements, and rural populated points.

Hence, every chief architect of a city, oblast, or kray must now in 1980 concern himself well ahead of time with plans to distribute construction and with the set of draft documents, taking into consideration the necessary variants and with the precise determination of priorities within the final version of the five-year plans so that the interests of the client and those of the contractor are coordinated with the interests of forming the city, its individual districts and architectural ensembles.

In drawing up the five-year plans there has been an increasing role for the scientifically grounded technical and economic norms and specifications. In particular, the responsibility for improving urban construction norms has been assigned to USSR Gosstroy. Meanwhile, at the present time the situation with regard to these norms cannot be recognized as satisfactory. Let's imagine, for example, that one of our ministries intends to provide during the 11th Five-Year Plan in a specific city for the construction of a new industrial enterprise or the expansion of an existing one, connected with an increase in the number of employees amounting to a thousand persons. Could we today, on the basis of official methods directives and norms, answer the following very important question: what volume of capital investments in the construction of non-productive projects must be provided for in the estimates for such a facility?

The answer is no. Such integrated norms, scientifically grounded, differentiated by regions of the country as well as by branches of industry and the national economy do not exist. There are only the results of the work of design organizations, urban-construction and planning organs, which are, to a large extent, contradictory and which permit a broad spectrum of interpretive values.

Nevertheless, such norms are utterly necessary for planning. For any ministry, enterprise, or industrial-type design organization, knowing that in accordance with the norms each new worker, for example, in the regions of the Tyumensk North requires the inclusion in the estimate of additional cost outlays

amounting to 15,000 rubles, will take a completely different and more responsible approach to the solution of the problems of increased labor productivity, which are so important at the present stage.

Working out and confirming similar scientifically grounded norms is the key to carrying out the comprehensive planning of production-type facilities and the social infrastructure. Scientific-research and the appropriate type of planning organizations must, under the general direction of USSR Gosstroy and USSR Gosplan immediately proceed to this work. Moreover, it should be emphasized that the existing SN and P (Construction Norms and Regulations) (II-60-75) cannot be utilized for these purposes. They are suitable only for determining the dimensions of the territories which must be set aside in the corresponding planning projects.

An essential shortcoming of many urban-construction norms also consists in the fact that they groundwork is not checked out by the balance method, whose importance at the present stage of improving planning has also grown substantially. Checking out many norms by using the balances of labor resources and, in particular, the number of service personnel within the entire aggregate of the normative network of cultural-domestic facilities or a balance of free time among the individual groups of the population has revealed serious shortcomings in the existing norms. For example, in accordance with research studies carried out by the TashZNIIEP (Tashkent Zone Scientific Research Institute of Economics and Planning) the attendance by a school pupil of all rooms, institutions, and buildings within the normative network of the cultural-domestic facilities would require nine times as much free time as he has in fact now.

Analysis of Soviet and world-wide architectural-urban-construction practice convinces us that with regard to economics there is a need to improve quite a few more norms which are in existence today; they are binding the creative potentials of our architects in utilizing progressive and rational planning, structural and architectural-artistic solutions. This has to do with a number of norms specifying the effectiveness of utilizing urban territories, as well as with certain obviously obsolete fire-protection and sanitary norms. There has been no compilation of exceptions and certain estimate norms and prices on products and materials to be utilized in construction.

Architects and urban builders are confronted with the responsible tasks of working out as the most important component part of the plan targeted, comprehensive regional programs of development for the regions of Siberia, the Far East, the Non-Chernozem Zone of the RSFSR, and a number of others. The formation of large territorial-production complexes in the petroleum-bearing regions of Western Siberia, in the regions of the unique coal reserves of Neryungra, Sharypov, and Ekibastuz, in the zone of influence of the BAM (Baykal'-Amur Mainline), the Sayano-Shushenskaya GRES, and the Nurekskaya GRES, in the region of the Kursk Magnetic Anomaly, and others requires urgent and extremely responsible work by architects and urban builders with regard to the formation in these regions of rational systems of distribution and

planning of cities and settlements.

Soviet architects and our leading planning organizations, among which we should like to especially single out the SibGNIIEP (Siberian Zone Scientific Research Institute of Research and Planning) are devoting serious attention to the solution of these problems (this is testified to, in particular, by the materials published in this issue of the journal). However, practical experience has shown that here also we cannot avoid extra cost outlays. Two dangers menace the planner in working on large-scale and prospective urban-construction complexes: an underestimation of the future, the adoption of a short-sighted business solution, and, on the other hand, a divorce from the reality of the period being planned. And if the great majority of the planning operations linked with the development of the most important territorial-productional complexes at the present time have already successfully avoided the first danger, and they cannot be reproached for underestimating the future, the realistic quality of many planning proposals and their multifaceted socioeconomic grounds have not passed the test of time.

Certainly the fault lies not only (and not even so much at all) with the architects for the fact that house-building combines, for example, in Nizhnevartovsk or Neryungawill be put into operation at a time when already half of these cities will be built up by houses in a hit-or-miss fashion. But the fact that in the general plans for these and many other cities being built in regions of Pioneer mastery, which are difficult of access, no timely provisions were made for organic ties with its territorial nucleus for a planned, less than capital, but no less qualitative construction, for example, of wooden-beam or panel houses, prefabricated-sectional facilities, and other buildings which do not require the creation of a highly expensive construction base--these are miscalculations which are being corrected by life itself and with considerable losses.

This could also be said about the first variants of the plans for a number of station settlements along the route of the BAM (Baykal'-Amur Mainline).

It is especially irritating when creative ideas which are basically correct, progressive, and interesting are discredited because they are insufficiently reliable and are linked in all manner of ways with economic, technical, and organizational factors, determining the possibility of implementing them at the given stage. We must derive lessons from this experience. Ahead lie enormous projects with regard to assimilating the regions of Siberia, the North, and the Far East. Only the combination of high occupational skills and a genuinely state-type of approach will allow the architects to make their own worthy contribution to this cause of all the people.

It is well known that one of the most important factors in converting the economy to an intensive path of development is the universal increase of social labor productivity. This task can receive multifaceted reflection

in the creative activity of our architects, but we would like to dwell on only one aspect--consideration in the plans for apartment houses and mass public buildings of the requirements to reduce labor outlays in operating them. Although in recent years attention to solving these problems, both on the part of Gosgrazhdanstroy and on the part of the planning organizations has increased substantially, it is still far from corresponding to the problem's economic importance.

Every year in our country apartment houses with a total area of more than 100 million sq. m are put into operation. The level of the engineering and technical equipment of apartment houses and mass public buildings is becoming constantly more complex. Meanwhile, balance-sheet estimates of labor resources show that neither in the imminent nor the remote future can we count on an increase in the number of employees in the housing and community service field. Therefore, the plans for our micro-regions, apartment houses, and public buildings must contain the specially worked-out details of all the problems of operation: dispatcher control of engineering services, the maintenance of the areas around the apartment houses, approaches, and stairways of the buildings, trash removal and sanitation, current repairs and the replacement of parts of a building with a short service period, etc. All this is economically no less important than the estimated cost, labor consumption, and material consumption of construction. One poorly thought-out step in a trash-collection room of an apartment house or at the edge of the trading floor and auxiliary areas of a store, not even to mention an imperfect structural component of a building's roof or foundation, during the time of its service turns into many thousands of additionally lost man-days, and it inflicts damage which is incommensurate with a certain one-time increase in cost, connected, for example, with the use of longer-lasting materials.

At the present time measures have been outlined for developing the country's fuel-and-energy complex and, on the whole, a raw-material complex. At the same time, no matter how great our national resources may be, we cannot allow any kind of squandering, and we must exhibit the maximum care in utilizing metal, fuel, and energy. In this connection, in practically all the areas of the national economy a unique psychological restructuring is taking place, a re-examination of many long-standing, it would seem, positions from the point of view of economizing on metal and fuel resources. This consists of a precipitous development of nuclear-power engineering and the conversion of boiler-type and thermal electric power stations from liquid to solid fuel or gas, along with the conversion of motor-vehicle transport tp diesel, as well as the utilization of thermal waters and solar energy, and a great deal else.

In architecture and urban construction an important role in this regard is being played by the trend in the further development of enclosing structural components of apartment houses and mass public buildings and installations. And we are talking here not about the extreme penchant for glass, which in general, albeit with single instances of relapses, is an already passé stage in the development of Soviet architecture, but rather about a more essential subject.

During the 1950's the precipitous industrialization of residential construction, the transition from using small-piece materials (primarily bricks) to large panels permitted a substantial reduction of labor consumption in building apartment houses, and this played a very important role in increasing the volume of residential construction and the rate of solving the housing problem in the country. At the same time practical experience has shown that with the indisputable advantages of using large-scale industrial methods in the interior structural components of buildings (ceilings, staircases, partitions, and so forth), their use in exterior walls, along with advantages, also has a number of serious shortcomings. There has been a substantial increase in the expenditure of heat, as calculated per sq. meter of the house's total area, and outlays for repairs and metal consumption have also grown. This is particularly true with regard to single-layer panels made of keramzit concrete with their relatively high volumetric weight; they are still the most widespread type of exterior panels.

An analysis of worldwide practice shows also that during the last few years major achievements have taken place in the technology of producing effective bricks and ceramic stones (the growth of labor productivity has doubled in comparison with the level of the 1950's), and more and more widespread use is being made of monolithic reinforced concrete and wood.

The question of the economic effectiveness of individual types of enclosing structural components has brought about a considerable amount of discussion and dispute at the present time. However, if we correctly include in our computations the fuel outlays required for the production of keramzit and the panels made of it, as well as for heating the buildings during their entire service life, then the additional labor expenditures for extracting and transporting the required extra fuel (taking into consideration its progressively increasing costs) will reduce to nothing the one-time profit in labor consumption derived from constructing buildings with exterior walls made of large keramzit-concrete panels, as compared with walls of structural components which are more economical with regard to fuel expenditures in their production and operation.

We should not, of course, be too definite in drawing the conclusion from everything stated above that it would be feasible to curtail large-panel housing construction. In the major cities, where an appropriate base for industrial home-building has been created, and in new regions with concentrated construction large-panel home-building must be developed further, but under the conditions of continuing improvement of the thermal engineering characteristics of exterior panels, using effective insulators.

At the same time the time has arrived to restore to good graces such splendid, traditional wall materials as brick and wood, but to restore them on a new, up-to-date, technical level, bearing in mind the modern production of effective bricks and ceramic blocks, as well as the development of plant-

manufactured, wooden, large-panel home-building. We cannot help noting that in a number of rural regions, in regions which are difficult of access and for initial development, as well as in cities and settlements with small volumes of construction the economic feasibility of such a solution does not provoke any doubts.

It would seem that we should pay greater attention to more widespread experimental testing and economic evaluation as well as experience in using monolithic, reinforced concrete in the construction of apartment houses and especially of certain public buildings (primarily in regions with particular building conditions).

In general, the development of industrialapartment-house construction is one of the deciding factors in the economics of architecture and urban construction. It appears that the general trend, which has now become definite, namely, the use of the block-sectional method, allows at the present stage the most successfull combination of the solutions of socioeconomic and architectural-urban-construction problems of housing construction.

Nevertheless, acquaintance with the practical experience of housing construction in a number of our major cities compells us to make a number of remarks.

The sense of the block-sectional method consists in the fact that within the limits of a single series in its mastery by all the home-building enterprises of a given city a practically unlimited diversity of specific architectural solutions may be obtained. Despite this, for example, in Krasnoyarsk and Omsk, where we happened to be visiting recently, along with mastering the replacement of apartment-house series used previously by extremely progressive Series 97, which was especially developed for Siberian conditions, they also intent to assimilate Series 137, borrowed from Leningrad, on the pretext of guaranteeing diversity of construction. In fact, this will not add diversity since only a limited number of house-types will be produced, and the economic indicators for construction will grow substantially worse.

In conclusion, we would like to make several comments on the creative direction of Soviet architecture at the present stage and its accordance with the basic directions of the country's economic and social development.

During the last few years Soviet architects have created quite a few buildings, structures, and their complexes whose architecture has received unanimous favorable appraisal both from professionals as well as from the broad masses of the population. Particularly gratifying has been the appearance of undoubted achievements in the field of a higher stage of architectural creativity--the creation of fully valued architectural ensembles.

Serving as an example of a successfull creation of an expressive architectural ensemble is the construction of the square before the bridge in Krasnoyarsk (architect Demirkhanov).

The simplicity and clarity of composition, the resolved harmonious, reciprocally well-balanced disposition of the three buildings--the City Soviet, the hotel, and the opera theater, the noble unity of coloring, scale, and rhythm, the magnificent interrelationship with the natural surroundings--the exit onto the Yenisey Bridge, the combination of an up-to-date treatment of details and a classical clarity of the basic meaning understandable to all--the opening onto the river and the accenting of the entrance onto the bridge, allows us, in our opinion, to include this ensemble among the best achievements of Soviet urban construction during recent years. Everything here is rational, well-thought-out, understandable, and is pleasing to the eye.

Quite a few individual buildings and facilities have been erected in which an interesting and unusual form is the result of aprofound penetration into the functional structure and the constructive solution to the project. As examples we can cite the library in Ashkhabad (architect Akhmedov), the Palace of Arts and the teahouse in Tashkent (architect Sutyagin), the airport building in Leningrad (architect Zhuk), and many others. Such projects do not offend our eyes with a deliberate unusualness but rather delight with their originality and freshness of forms, and what is extremely indicative, as a rule, they are characterized by quite good economic indicators.

At the same time many structures and projects of recent years are permeated with a desire to surprise by no matter what means, to do something which had never been done before, or, what is even worse, to demonstrate their acquaintanceship with the latest "masterpieces" of post-modernism in the West.

In that same Krasnoyarsk, for example, construction is now beginning on the second most important urban-construction complex--the point where the Kachi River flows into the Yenisey. And in the projects of this ensemble one already senses to a considerable degree a loss of that clarity and purity of solution which characterizes the square in front of the bridge. The authors were, so to speak, frightened that they would be suspected of insufficient knowledge of the latest "works" by the foreign architectural elite. As a result the large hotel with 1000 rooms was given a pretentious, bench-type form (which had already been used and was more justified in the hotel building in Dagomys), while the urban-construction solution of the ensemble and the reciprocal placement of the projects included within it are not presented as sufficiently convincing or rational.

We are far from the idea of considering that in an architectural structure or ensemble there cannot be found a place for elements directly proceeding from function and structure, but we are called upon to aid in expressing the architectural-artistic meaning of the structure or ensemble, its image. And if they successfully carry out this lofty mission, then they are rational and justified in the highest degree. But pretentious mannerism, a patchwork approach, a deliberate confusion of forms, and, all the more so, a thoughtless imitation of fashionable models are by their very nature profoundly alien to the fundamentalline of development of progressive Soviet architecture.

One of the most active and capable Irkutsk architects is Pavlov, who has constructed a number of successfull buildings; he designed the building of the Irkutsk gorispolkom in the form of a two-story shell, resting upon gigantic blind brick columns which are three stories in height. It is difficult to discover any sort of generally understandable rational idea constituting the basis of this extremely uneconomical and inconvenient solution except the striving for originality.

It must be understood that the economic criteria of rationality operating in a bourgeois society are radically different from those in a socialist society. An individual rich client or even a bourgeois state as a whole can permit itself the luxury for advertising purposes of financing any architectural extravagances, even going so far as turning a building inside out, as was done in the sensation-causing Bobur Building of the National Center of Arts and Culture in Paris, without giving any thought as to how much this answers the needs and tastes of the masses. In our country, however, the principal goal of economic social policy is to raise the level of the people's lives, as well as the formation of the new man, and we cannot divert financial means and material resources from this principal goal in the name of doubtful pseudo-architectural exercises which are alien to the interests of the broad masses.

Therefore, the task of our architectural community, the Union of Architects, Gosgrazhdanstroy, and the organs concerned with matters of construction and architecture consists of the following: while supporting and safeguarding all the genuinely innovative, creative searchings of original architectural searchings, directed at people's well-being, to place a stout barrier in the path of formalistic stunting in architecture, not to allow the irrational squandering of the people's funds, to bear in mind that an architect in our country is not a "free artist" but the servant of the people.

Siberian, Far-Eastern Cities

Moscow ARKHITEKTURA SSSR in Russian No 2, 1980 pp 4-17

/Article by N. Chernetsov, Architect and Special Correspondent: "Soviet Architects for the Cities of Siberia and the Far East"/

/Text/ In defining the future of the Soviet state, the great Lenin foresaw the enormous importance of the economic and cultural development of the country's eastern regions. The GOELRO (State Commission on the Electrification of Russia) Plan, which laid the foundation for national economic planning, was already being extended to this part of the country.

In devoting particular attention to the subsequent implementation of the course defined by Lenin, the Party and the government always ascribed enormous importance to drawing the very rich natural resources of Siberia and the Far East into the national economy. This assimilation began a long time ago. Its memorable milestones--Kuzbass, Turksib, and many others--have become a part of our history. For decades existing cities have been developed here, and new ones have sprung up. During the period of the Soviet regime almost 150 new cities have appeared in the regions beyond the Urals.

Particular attention to the task of assimilating the colossal territories lying beyond the Urals was clearly reflected in the resolutions of the 24th and 25th Party Congresses. They have been successfully implemented in the development of the Western Siberian Petroleum Basin, in the construction of the BAM (Baykal'--Amur Mainline), the creation of a number of territorial-production complexes, such as, for example, the Sayanskiy with its power engineering center--the world's largest--the Sayano-Shushenskaya GES, created in honor of the great Lenin.

The more extensive becomes the comprehensive assimilation of the natural resources of Siberia and the Far East, the more existing cities are developed here and new ones built. In particular, during the last 20 years alone 35 new cities have appeared in this part of the country. Among them we may name, for example, Ust'-Iliask, Baykal'sk, Biryusinsk, Zheleznogorsk-Iliaskiy, Bikhorevku, and Shelekhov in Irkutskaya Oblast, Lesosibirsk, Sayanogorsk, Divnogorsk, Sosnovoborsk, Nazarovo, Abazu, and Sorsk in Krasnoyarskiy Kray, Amursk in Khabarovskiy Kray, Mirnyy, Neryungi in the Yakutskaya ASSR, and many others. The nature of the region's urban-construction practice may be judged by the following example: during the years of the 9th and the elapsed period of the 10th Five-Year Plans the workers of the Krasnoyarskiy Kray obtained more than 13 million sq. m of total residential space in well-constructed houses, schools with 163,000 seats, children's institutions with 54,000 seats, and a great many other cultural and community-type facilities.

Urban-construction practice in Siberia and in the Far East has encountered considerable difficulties caused by the severity of the natural conditions, the enormous gap between the summer and winter temperatures, the presence of large territories with permafrost, the relative low density of population and the great distances between populated points, which greatly complicates the organization of the transportation network. Under such extremely difficult conditions we must solve more and more problems with regard to planning and construction in regions which represent essentially the frontier territory for the development of the country's national economy.

The exceptional attention being paid by the Party and the government to this territory was reflected by the trip which was made during the spring of 1978 by the General Secretary of the CPSU Central Committee and Chairman of the Presidium of the USSR Supreme Soviet, Comrade L. I. Brezhnev, through the regions of Siberia and the Far East. Comrade L. I. Brezhnev's directives and recommendations were poured into a militant program of practical activity. It expressed concern for speeding up the assimilation of natural resources, increasing the amounts of housing construction, cultural and domestic-service

projects, engineering communications and facilities for the cities and settlements in order to create here favorable conditions for the population to live and to strengthen personnel staffs in these regions.

Speaking on 27 November 1979 at the Plenary Session of the CPSU Central Committee, Comrade L. I. Brezhnev turned to these matters again, and, in posing the problem of manifesting a heightened concern over cultural and domestic-service conditions, he emphasized that this pertained especially to the regions of Siberia, the Far East, and Kazakhstan which were being newly assimilated.

Carrying out grandiose construction programs in Siberia and the Far East naturally requires an extensive and firm base for planning and for improving the organization of planning. The role of the architects in this creative activity has increased immeasurably. We can note quite a few achievements in their work which is being carried out for the regions of Siberia and the Far East.

And here is to be found a place for the use of the principle of comprehensiveness. As an example of comprehensiveness in construction and the regional landscape organization of the environment we may cite the residential district of Cheremushki in the city of Sayanogorsk; it was designed for the builders of the Sayano-Shushenskaya GES and situated on the bank of the Yenisey River. Its center was formed compactly and, at the same time, on a good scale, successfully composed around a plaza-mall with public buildings. Planners from Lengidroproyekt have ensured fine living facilities for the new settlers here.

The problems of organizing planning for the construction projects of Siberia and the Far East are always at the center of attention of Gosgrazhdanstroy, RSFSR Gosstroy, and the USSR Union of Architects.

During recent years Gosgrazhdanstroy has organized a series of conferences and excursions to sites, devoted to this problem. During this same period the Union of Architects organized excursion-sessions of the Secretariat of the Board of the USSR Union of Architects in Tyumen' and Tobol'sk, in Tynda jointly with Gosgrazhdanstroy and RSFSR Gosstroy; moreover, it has conducted a series of zonal conferences. The architects of Northwestern Siberia and the Far North have been aided by the Commission on the Far North of the Leningrad Organization of the Union of Architects. During the past five years approximately 400 architects from Siberia and the Far East have completed centralized seminars under the administration of the Union of Architects in order to improve their skills. Excursion brigades of specialists have acquainted themselves with the practice of planning in 26 cities in this region.

In June of last year the Eighth Plenary Session of the Administrative Board of the USSR Union of Architects was held in Krasnoyarsk; it was devoted to such an exceptionally urgent topic as "The Role of Architects in Forming the Residential Environment of the Cities of Siberia and the Far East." Taking

part in this broad forum were numerous members of the architectural community from various cities throughout the country, workers from Gosgrazhdanstroy, RSFSR Gosstroy, Grazhdan proyekt, as well as representatives of Party and Soviet organs.

The participants in this Plenary Session made a detailed analysis of the situation which has taken shape in the developing cities of Siberia and the Far East which are under construction; they disclosed the most pressing problems, noted shortcomings, and proposed suggestions for eliminating them. The completed resolution which was adopted by the Plenary Session outlined a well-developed program for further work in this field.

The Plenary Session took note of the fact that the resolutions of the Party and the government have emphasized the great importance for the future of the country's eastern regions of applying the principle of comprehensiveness in the development of productive forces. In particular, this has found expression in the creation of strong territorial-production complexes. But this in turn sets up new complex problems for our architects. They are called upon to create cities and settlements, as well as major industrial facilities which, in their architectural appearance, urban-construction, and volume-planning decisions answer the ever-increasing demands of Soviet workers, and in the cities they must create the best possible social conditions, favorable for people's labor, everyday life, rest and recreation. This means that the environment of the human habitat must also be complex.

But in order to feasibly organize and plan a complex municipal living environment, we must determine its content more precisely. The participants in the Plenary Session expressed their own ideas regarding this problem. It was asserted that, "in addition to housing and apartment houses, the residential environment of urbanites should include everything necessary for organizing a convenient life for people, cultural and domestic-service buildings, well-laid-out facilities, etc. Within a single, contiguous complex solutions must be found for social as well as aesthetic problems, inasmuch as a person judges the life environment which is being created for him not only by those conveniences which are presented to him but also by the artistic qualities which are inherent to the environment. The creation of a complex, full-valued environment for human life is a matter of the utmost importance since the very basis of forming a harmoniously developed, highly formed, spiritually full-valued modern man is unthinkable without that well-laid-out, comfortable, architectural-spatial complex of buildings and facilities, whose aggregate together with housing forms the concept of a living environment. The creation of a living environment with such qualities and merits constitutes the most important civic mission of the architect. The Soviet architect is a state figure, called upon to safeguard and multiply the national resources by creating a fully valued artistic environment for human life, labor, rest and recreation. In the final analysis, architecture bears within itself an invaluable ideological principle by means of its direct influence on the education and emergence of man himself.

In analyzing the situation, the participants in the Plenary Session indicated the essential shortcomings which are encountered in architectural-construction practice. In particular, departures from the general plans

are still permitted quite frequently. It would seem that the general plan should be the foundation for the over-all construction of cities; actual construction, however, frequently proceeds with substantial departures from this determining, urban-construction document; moreover, it is often conducted in an extremely haphazard manner. In practice such tendencies are not always in conflict with the local planning institutes and organs of architecture, whereas the central institutes which take part in working out the general plans after issuing the specifications usually do not participate in implementing the decisions adopted by them.

A characteristic of many new Siberian cities is the fact that the population in them is primarily on the young side, and this, it would seem, must leave an imprint on the cultural-domestic service assurance of the "youthful" city by means of children's institutions, schools, etc. But the existing urban-construction norms do not take this circumstance into consideration.

Unfortunately, the few examples of the successfull creation of a comprehensive environment are not characteristic of the over-all situation, and one may still quite often observe a lag in the construction of cultural and domestic-service-type facilities behind the construction of apartment houses in the cities of Siberia and the Far East. And this substantially reduces the convenience of living in the new residential districts, worsens social conditions in them, and at times causes an outflow of population from such cities.

Non-comprehensive construction may also be encountered in cities which took shape long ago, for example, in such a large city as Omsk in the new micro-regions children's institutions have been built only to 60 percent of the number required by the norms, while schools amount to even less--40 percent. Moreover, analogous shortcomings can be observed in Khabarovsk, Vladivostok, Nakhodka, and other cities.

Sometimes it happens that the cultural and domestic-service buildings were constructed but are not used for the functions which are proper to them. For example, a trade center was built in Khabarovsk in the Southern Residential Micro-Region, but it is being used as an all-regional center, which does not at all correspond to its functional scale.

Non-comprehensive construction in many cases is a result of shortcomings which exist in the planning and financing of construction, at time representing a consequence of insufficient attention being paid to these problems on the part of ministries, as well as their underestimates of the importance of constructing housing and especially cultural-domestic-service facilities. For example, with regard to the city of Minusinsk the Ministry of the Electrical Equipment Industry reduced the allocations for implementing the needs of this ministry for the first stage of housing and public construction; it excluded all schools except one, all medical-treatment institutions, cultural and educational projects, trade enterprises, and public-eating enterprises.

Noted at the Plenary Session as a major shortcoming which has a negative effect on social qualities and the comprehensiveness of architectural-ensemble construction is the unsatisfactory situation with regard to furnishing construction with standard plans. For the construction of cultural-domestic--service buildings use is made of the most diverse plans, uncoordinated with each other architecturally and structurally, inasmuch as they are usually executed by different central planning institutes. It is not surprising that as a result of this the appearance of construction has become extremely chaotic. Moreover, these plans, which were frequently worked out by institutes divorced from the construction sites, often do not take territorial specific conditions into consideration. For example, there are 11 standard plans for building secondary schools with 30 classrooms each in Siberia and the Far East, but only a few of them take seismic requirements into consideration, and only one plan is designed for use under permafrost conditions.

All this has brought about a need for subtantial refinements and revisions to be made in the plans at the construction sites. And it is precisely here at the sites that, in the final analysis, the appearances of micro-districts, districts, and cities are determined.

As a rule not a single construction-industry enterprise nor a single house-building combine issues an entire products-list series or even one series of standard plans for apartment houses which ought to be utilized in this or that city. Most of the house-building combines have not yet assimilated the third-generation standard plans--Series 112, I-164, 122, and others. A strange situation has been created: the institutes of Gosgrazhdanstroy work out newer and newer series of standard plans, but the enterprises of the USSR Ministry of Construction and other lag far behind in introducing them. But, of course, such an introduction would bring about an increase in the economic efficiency and architectural quality of construction. The situation is particularly aggravated by the fact that the quality of the items produced by the construction-industry enterprises and the quality of construction operations are frequently low, while the organs of architectural control far from always present the necessary requirements.

At the Plenary Session alarm was expressed concerning the situation of personnel. The total number of architects employed on the Grazhdanproyekty of cities in Siberia and the Far East is extremely modest, whereas the amount of planning operations to be carried out by each architect is significantly more here than in the European part of the country. And only self-sacrificing labor allows them to carry out the great tasks assigned to them by life. And there is still too little aid rendered to local architects by the central scientific-research and planning institutes.

The participants in the Plenary Session made quite a few valuable remarks and suggestions when then formed the basis of the decision which was adopted.

For example, it was noted that it is necessary to employ all possible measures to raise the level of the urban-construction culture, to make comprehensive plans for the environment surrounding man on the basis of scientifically grounded forecasts, with multifaceted consideration being given to natural conditions and the implementation of measures to improve the health of this environment.

Naturally, we need to train more architectural personnel for Siberia and the Far East. It is high time to create an architectural institute especially for the needs of Siberia. Such a higher educational institution could be organized on the basis of the architectural faculty of the Novosibirsk Engineering and Construction Institute. Novosibirsk has at its disposal qualified staffs of teachers and practical planners; they could assure a high level of of instruction.

The Grazhdanproyekty in the cities of Siberia and the Far East need to be strengthened by architects and to heighten their role in these institutes. Up to now the most senior architect in the administrative heirarchy here has been, as a rule, an architect in the role of a deputy chief engineer of the institute. And it is time for him for the greater good of the cause to occuppy a position equal to that of the chief engineer, to be the chief architect of the institute and the deputy director.

There is the urgent matter of extending the rights of the architect, especially the chief architect of the city, whose role must be increased. For he must have a multifaceted knowledge of a city's needs and solve many diverse problems, as well as coordinate the requirements of clients, planners, and builders. Hence, the selection of a candidate for the post of chief architect of a city must be careful and thorough, and his support on the part of Party and Soviet leaders of the city must be constant and widespread.

Practical experience has shown that the skills of local architects are growing. This was demonstrably revealed by the large exhibition of works by architects which was held in conjunction with the Plenary Session. The outstanding ensemble of the left-bank plaza anterior to the bridge and facing the Yenisey River may be cited as one of the particularly brilliant and positive examples of creative achievements by the architects. Such a broadly conceived ensemble could ornament even the capital city.

But these are only isolated instances, and the general level of the skills of the architects of Siberia and the Far East must be raised. Here too we must fully enforce the statute which asserts that in the formation of a full-valued complex environment for human living the professional skills and ideas of the creative points of view of the architect should be of enormous importance. Of course, this also gives rise to great professional responsibility on the part of the architects, and not only the architects but also all the other planners and engineers.

The participants in the Plenary Session consider that the most important prerequisite for creating a full-valued living environment in the cities of Siberia and the Far East is improving the system of standard designs for this region. In the opinion of the architectural community we must strengthen the role of the central and zonal scientific-research and planning institutes for standard and experimental planning as methods-type and scientific-research centers, providing the principal direction for planning, taking into account the specific characteristics of Siberia and the Far East. All this should find reflection in the standard plans for apartment houses and cultural-domestic-service-type buildings which are being developed by these institutes,

as well as in preparing new sections of the Construction Norms and Regulations. In order to give an individual appearance to the new apartment houses, characteristic for a specific city or region, it is necessary to conduct at the sites in the Grazhdanproyekty active work on the architectural improvement of the new series, to carry out the development of facades, utilising local construction materials.

In connection with this, many of those who spoke at the Plenary Session declared that it was high time to abandon such a bureaucratic term as "adhering to" a standard plan. This process should not be a mechanical formal adaptation of the plan to local conditions, as is sometimes the case, but rather a profoundly creative matter and requires a specification appropriate to it. It is well known that in the hands of genuine master architects "adhering" can be a talented work, leading to first-rate architectural-artistic solutions and a good quality of construction.

Experience has shown that the problem of improving the quality of mass-housing architecture is a complicated matter, relating to many other matters, particularly planning, construction, good facilities, etc. And it is not surprising that for the improvement of the architectural quality of construction it is very important to have as firm a creative contact as possible, mutual understanding between architects and the workers of the house-building combines. It is high time to create in the major DSK's (house-building combines) architectural groups and to introduce the position of chief architect of an enterprise. We need to decisively speed up the introduction in the house-building combines of Siberia and the Far East of new series of standard plans for apartment houses with an extensive products-list of block sections as well as plans for improved variants of apartment buildings.

The success of the comprehensive build-up of cities depends, to a great extent, on the close business-like contact between all the links in this process: client--planners--builders. As a positive example of such practice we can cite the conclusion by the TsNIIEP (Central Scientific Institute of Economics and Planning) of housing of negotiations concerning the creative cooperation with the house-building. Success in these instances depends, to a large degree, on what kind of participation the gorispolkomy are taken in implementing these negotiations. Analogous creative negotiations concerning cooperation between the three principal links--planners--builders--gorispolkom--may have a great effect on planning and construction.

In order to attain a more complete degree of comprehensiveness in construction, it is feasible in the practice of planning and financing construction to establish the concept of the "delivery complex" with its necessary (in accordance with the plan) collection of residential, cultural and domestic-service buildings and good order, and to convert the builders to the method of delivery for operation of such a mandatory complex.

Further perfecting of urban-construction practice and improvement of the planning organization of Siberia and the Far East depends, in large measure, on Gosgrazhdanstroy and RSFSR Gosstroy, on the work of the planning institutes,

their participation in planning for this part of the country, and the aid rendered to local architects. This pertains especially to the activity of the SibZNIIEP (Regional Scientific Research Institute of Economics and Planning), which services the interests of an enormous region, as well as LenZNIIEP, which carrys out work for the country's northern regions. At the Plenary Session the thought was expressed of the feasibility of organizing a Dal'-ZNIIEP, which would satisfy the demands of builders in the territory of the Far East.

In increasing the skills and strengthening the creative ideas of the architects of Siberia and the Far East, as well as activating their work and strengthening their professional responsibility, the organizational and educational work of the Union of Architects and its local organizations is of great importance. In particular, the resolutions of the Plenary Session provide that in order to render creative aid on the part of the Union of Architects to the architects of the cities of Siberia and the Far East, it is necessary to conduct two or three seminars every year in conjunction with the local organizations of the Union of Architects in the cities of this region for the purpose of increasings skills with regard to the urgent matters of architectural creativity.

The Plenary Session approved the initiative of the Board of the Leningrad Organization of the USSR Union of Architects with regard to concluding treaties on creative cooperation with a number of organizations of the Far Eastern zone, and it proposed to the Boards of the Moscow Organization of the Union of Architects and the republican Unions that they support this important initiative by the Leningraders with regard to rendering specific creative aid to the organizations of the Union of Architects of Siberia and the Far East.

It was recommended to the Boards of the republican Unions of Architects that they strive more actively to attract the leading architects and masters of architecture to the planning, review, and discussion of plans for cities and settlements along the route of the BAM; such plans are being executed in the appropriate institutes and organizations of the RSFSR and other republics.

In order to activate the social and creative work of the organizations of the Union of Architects in Siberia and the Far East, it has been proposed to form Soviets of the Siberian and Far Eastern zonal groups, including members of the Administrative Secretariat of the Union of Architects of the USSR for the zone and chairman of the local organizations of the Union of Architects of the Union of Architects of the USSR.

The resolution states further that in the zonal groups we must make more extensive practice of organizing creative discussions, reviews, and meetings to exchange experience, which will facilitate the raising the level of the architects' professional skills and creative activity, conduct more architectural competitions, attracting to participate in them not only the leading masters of architecture but also young architectural forces.

The task of drawing the youth into the activity of the organizations of the organizations of the Union of Architects, raising its ideological and professional level must be facilitated by its active participation in the 1980 All-Russian Review of the Creative Work of Young Architects.

The implementation of the resolution which was adopted by the Plenary Session will undoubtedly help to raise to a higher level the architectural quality of building up the cities of Siberia and the Far East, and it will facilitate the creation here of a complex environment, satisfying the demands of the population and those of this colossal region of the country.

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DEVELOPMENT OF CENTRAL AREA OF MOSCOW DETAILED

Moscow NA STROYKAKH ROSSII in Russian No 1, Jan 80 pp 48-51

[Article by A. Bekker, manager of the Science Section of NIiPIgenplan [Scientific-Research and Design Institute for Master Planning] of Moscow and candidate of architecture: "Shaping the Capital's Center"]

[Text]

- The capital's center is a single regionally developed polycentric system.
- The most important element is the historic nucleus within the Sadovoye Ring.
- Reconstruction of the Bul'varnoye Ring area.
- Centers for layout zones are being shaped.
- Olympiad-80 facilities are enriching the capital's buildup.

One of the most important tasks in realizing Moscow's master plan is that of shaping the capital's center: the functions of management and administration, culture and education, and trade and distribution are concentrated here.

Even now it occupies a vast area, where the country's higher party and state organs and leading administrative and social organizations on the international, Union and republic levels are concentrated.

Specially built cultural facilities are sited here: museums, art galleries, theaters and exhibition and concert halls, as well as large department and specialized stores, restaurants and hotels.

The capital's center is both a representative and a memorial center of the country, the scene of large-scale celebration of holidays and of presentations associated territorially with the city's historic nucleus: the Kremlin, Red Square and the V. I. Lenin Mausoleum, and the group of central squares.

Hundreds of thousands of workers toil in institutions here, the total number of people who are on its grounds daily reaching a million.

And at the same time it is extraordinarily dynamic: new institutions and personal-services facilities that meet the capital's requirements and match our society's social development are constantly rising up.

These circumstances naturally lead to the territorial development of the capital's center and to the reconstruction of existing parts of it. In considering this, the master plan calls for a long-range three-dimensional architectural structure for the center as a single regionally developed polycentric system that includes the existing historic nucleus of the city within the Sadovoye Ring, the complexes of the centers of the seven peripheral layout zones (the master plan divides the whole city into the center and seven peripheral layout zones with a population of about 1 million each), and the boulevards that join the nucleus with the peripheral centers (figure 1). This whole complicated spatial system is constantly being developed and improved: new complexes and ensembles are rising up and existing ones are being rebuilt or supplemented, and architectural monuments are being restored.

It is natural that, in shaping the capital's center, various urban-development tasks are resolved as a function of the concrete situation and the location in the city and that different architectural methods are used. While in the central zone, the architectural environment that has existed for centuries, which requires positive consideration and subordination thereto in matters of composition, is a determining factor, such an environment is only now being formed on the periphery, and the complexes of the city's center should play the leading role here and become dominant architectural features. These tasks should be considered in creating these complexes.

The city's historic nucleus inside the Sadovoye Ring--a most important and complicated element--occupies the leading position in the system of the capital's center. Much has been done here in recent years: major work to restore architectural monuments, primarily of Moscow's Kremlin, which, together with architectural monuments of Kitay-gorod, Zamoskvorech'ye and Belyy Gorod, play the most important role in the center's composition. The whole area within the Sadovoye Ring has been put in order and improved.

Work is being done to rebuild the squares of the Bul'varnoye Ring: the Nikitskiy Gates Square has been cleared of a dilapidated, inferior buildup, and the Bolshoye Vozneseniye cathedral has begun to play the supreme role in its architectural-spatial composition. The new TASS building, which was solved in modern architectural form, has been subordinated in scale to the overall development of the square and does not disturb its unity.

The shaping of Pushkin Square is being finished: the new building for the editorial board of the newspaper IZVESTIYA has been erected here, and a subway station has been opened up (figure 2 [not reproduced]). During the rebuilding of this square, the nature of the architecture of the new

construction was created to take into account the artistic form of the old IZVESTIYA building, which was erected in 1927 in accordance with a design of the Barkhiny architects and was a valuable monument of Soviet architecture.

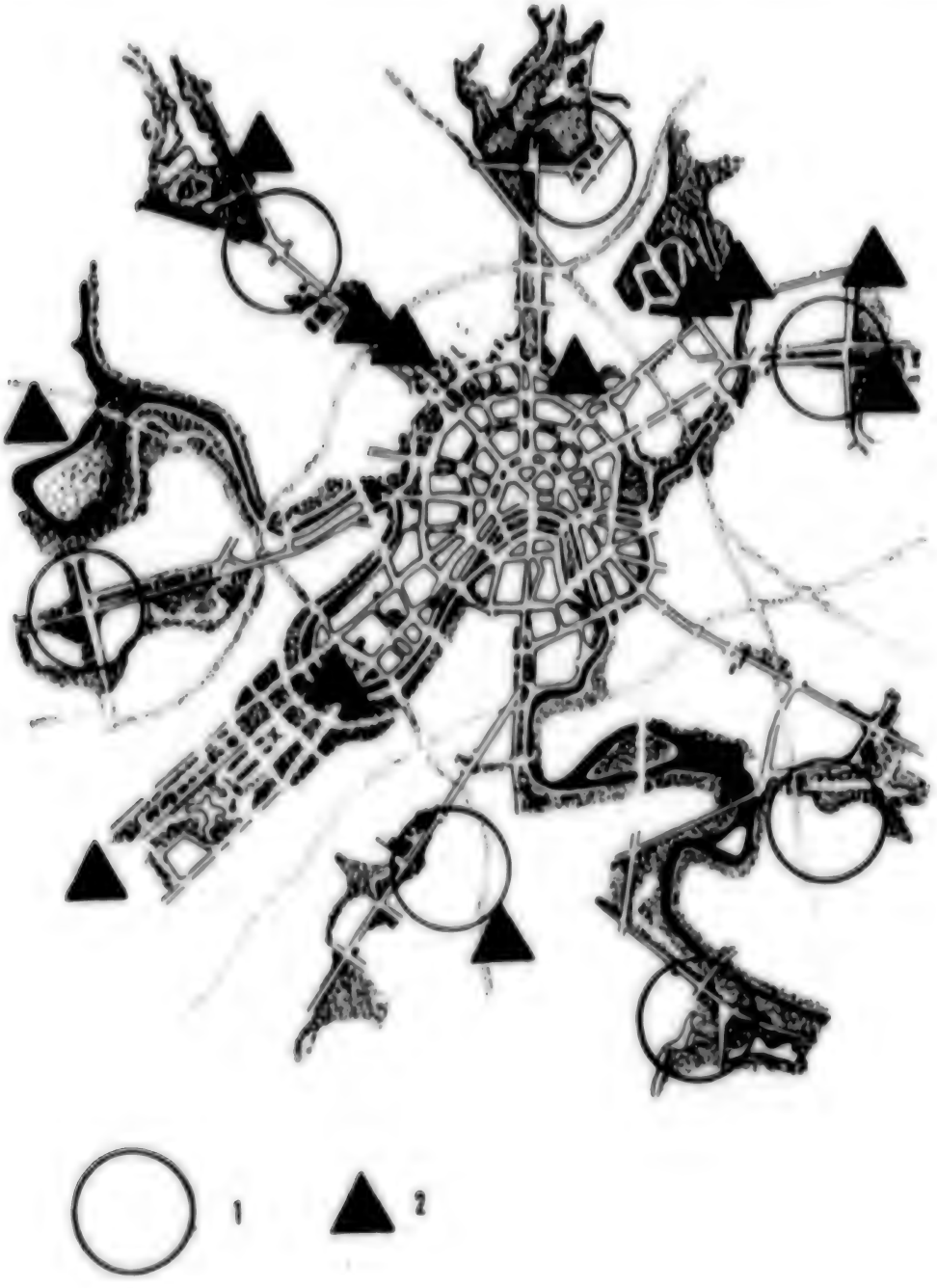


Figure 1. Diagram of Moscow's Center.

1. Centers of the layout zones. 2. Olympic Centers.

The erection of the Political Education Building is changing the face of Trubnaya Square. Theaters--the MKhAT [Moscow Artistic Academic Theater of the USSR imeni M. Gor'kiy] on Tverskiy Boulevard and the Sovremennik at Chistoprodnyy--have appeared in the central nucleus in recent years.

The first floors of the center's buildings are occupied by service institutions (cafes, restaurants and specialized stores). All this is aimed at filling it with public functions, the requirements for which are constantly growing.

Along with the integration of public functions directly in the historic nucleus, a territorial expansion of the central zone is noted. Sadovoye Ring squares are being enriched by new complexes. Close to Krymskaya Square buildings of the Olympiad-80 press center and the Progress Printing House are being erected. The reconstruction of Smolenskaya Square has been completed with construction of the Belgrad Hotel. The character of Oktyabr'skaya Square is being changed: a group of administrative buildings (figure 3 [not reproduced]) is being erected here.

A new zone of the center is being formed at the Krasnopresnenskaya waterfront, where, alongside the CEMA building, construction of the RSFSR House of Soviets and, beyond that, the International Trade Center, is being completed. Establishment of the center's zone is also being continued to the southwest. Here, close to Yu. Gagarin Square, the building of the Presidium of the USSR Academy of Sciences building is being erected among scientific institutes.

In recent years, complexes of the capital's institutions have been formed especially actively at the city's periphery, but this applies mainly to the centers of the layout zones. One of these centers is taking shape at the Shchelkovskaya Subway Station, where a shopping center and the Sofiya Film and Concert Hall have been built and an athletic complex is being erected. At the Izmaylovskiy Park Subway Station a complex of high-rise hotels for 10,000 guests is being erected, along with a large complex of servicing activities.

Large ensembles are rising up also in the other layout zone centers. These centers are called upon to duplicate functionally the city's center, to relieve it of excessive loads and to bring capital-level institutions to the peripheral residential tracts, where the major portion of Moscow's population now resides.

Specialized medical centers--oncological and cardiological--are being built on the city's periphery. Landscaping is being expanded: in the Nagatinskiy floodplain the Park imeni 60-Letiya Velokogo Oktyabrya has been laid out, supplementing the system of notable parks that are located along the shores of Moscow's rivers (the Filevskiy, Krasnopresnenskiy and Leninist Hills parks, the TsPKiO [Central Park for Culture and Recreation] imeni Gor'kiy and the Kolomenskiy and Tsaritsyn parks).

Olympiad-80 facilities are writing a special page in shaping the All-Union center of Moscow. Sites for erecting them were deliberately chosen within the capital-center system; such imposing structures are called upon to enrich central complexes architecturally and to supplement them functionally. Reconstruction of the athletic structures of the Stadium imeni V. I. Lenin at Luzhniki has been completed, and such new facilities as the general-purpose hall and the building for the ASU [automatic control system] for Olympiad-80 have been built here. Erection of the Olympic Village is being completed to the southwest.

To the east, close to the Izmaylovo hotel complex, an athletic zone based upon the Institute of Physical Culture is being shaped. A new thoroughfare--Severynyy Luch, which goes from Sretenskiy Boulevard to the television center and the VDNKh SSSR [Exhibition of Achievements of the National Economy of the USSR]--breaks through to the north. The most huge Olympic complex, which consists of a covered athletic hall for 45,000 spectators and a covered swimming pool, has been sited between Severynyy Luch and Prospekt Mira.

To the northwest, an architecturally expressive building for bicycle racing has appeared alongside the boating canal, and, to the south, in the Bittsevskiy parkland, an equestrian sporting center has been erected. Olympic facilities enter organically into the capital center system (figure 4 [not reproduced]).

The shaping of the center presupposes not only the construction of buildings but also the creation of a special environment of central squares and spaces. A synethesis of art pieces, improvements and landscaping, which are called upon to create the completed ensemble, have an important role here. Thus notable sculptural monuments of F. Engels, M. I. Kalinin, Ya. M. Sverdlov and L. N. Tolstoy have appeared here.

The center can be organized as a spatially developed system only if there is comprehensive, improved transport that provides links within the center and all the city's housing tracts and production areas. Therefore, speedy public transport--the subway, which, moreover, has a high throughput--acquires the greatest importance here.

During the Tenth Five-Year Plan 20 km of subway will have been constructed. Already the northern radial line--from the VNDKh to Medvedkov--has been lengthened, as a result of which the residents of these rayons are connected to the city's high-speed transportation. An eastern radial line to Perovo-Novogireyevo and a southern radial line are being built. When they are put into operation the center will become closer and more accessible for a number of rayons. A joining of radial lines and diametral lines also is important. Thus, creation of the Zhdanovsko-Krasnopresnenskaya and Kaluzhsko-Rizhskaya diametral lines has greatly improved the availability of transport service for the center for Muscovites.

A high pace of growth in the use of motor vehicles requires serious concern for improvement of the arterial-road system and of vehicle parking.

Much is being done about this: radial arterial roads are being rebuilt and multilevel transport intersections are being erected. However, the city's transport situation requires rapid solution of the organization of an additional road parallel to the Sadovoye Ring and multilevel crossings for transport traffic at such hubs as Smolenskaya Square and the Belorusskiy Railroad Station Square.

It has now become necessary to make active use of underground space, primarily for parking. Practical experience in the construction of underground parking in the VDNKh district and on Ulitsa Nezhdanovaya is convincing that it is desirable to create underground parking lots in the center, where a great shortage of land is being felt.

The "Scheme for the Use of Moscow's Underground Space," which the Mosgorispolkom [Moscow City Ispolkom] has approved, also proposed the placement of a large number of institutions for personal services in the city's center, in underground space, integrated into underpasses, subway exits and public-transport stops.

The capital center is being shaped in accordance with the master plan as a spatially developed complex system. Overcoming the difference between the center and the periphery, the city's center, in the form of a star, reaches far out with its rays to the very outskirts, where large social complexes are being established--the centers of the layout zones. The democratism of Moscow's urban-development solution is founded on such a structuring of the capital's center.

11409
CSO: 1821

OLYMPIC SPORTS ARENAS IN MOSCOW READIED

Moscow NA STROYKAKH ROSSII in Russian No 1, Jan 80 pp 52-55

[Article by A. Yegorov, chief design architect: "Reconstruction of the Sokol'niki Sports Palace"]

[Text] The design was developed by Mosproyekt-1 [Administration for the Design of Housing, Public Building and Municipal Services Construction of the Moscow City Soviet No 1].

The Olympic handball competitions under the program for the 1980 Games will be held at the Sokol'niki Sports Palace. This athletic structure of the capital, a former summer skating rink, was rebuilt for the first time in 1973, before the opening of the World-Wide Student Universiad. The volleyball competitions were held there at that time. Then the sports palace was used as a general-purpose athletic hall, primarily for hockey games and for training.

Now, in accordance with an approved design task, besides restructuring existing buildings, it is planned to erect new structures for training and for various services associated with the conduct of Olympiad-80.

The design for reconstruction includes:

the erection of an annex to the western stands;

rejuvenation of the existing athletic arena and expansion of the spectators' stands;

the erection of a training hall;

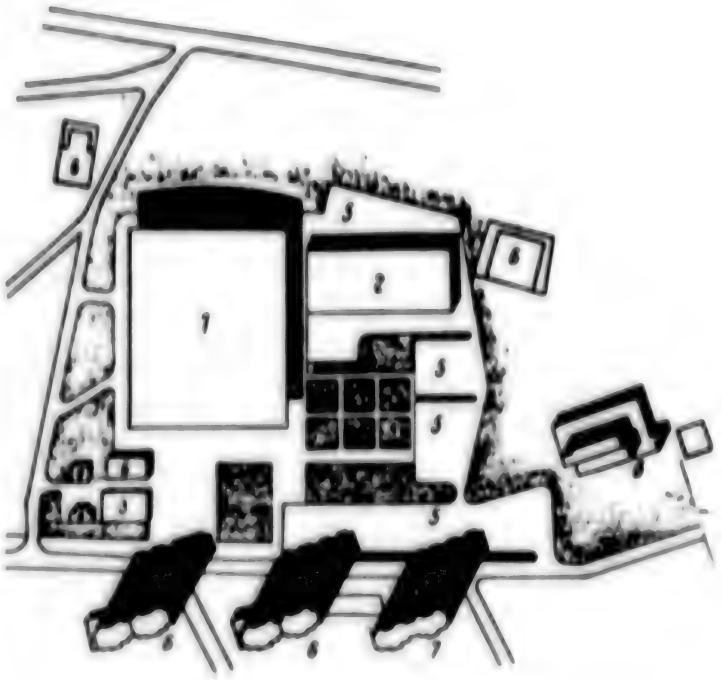
the construction of buildings for utilities;

the laying of access roads and vehicle parking; and

the installation of improvements and amenities for the grounds.

Master Plan for the Sokol'niki Sports Palace.

1. The sports palace building.
2. Training hall.
3. Cooling center.
4. Transformer substation.
5. Motor-vehicle parking lots.
6. Existing buildings.
7. Planned buildings.



The annex to the western grandstand was designed to accommodate officials and honored guests, the board of judges and the administration while the Olympic Games are being held. Snack bars for spectators, a press center, a postal division, security premises and utility services will be located here. This newly erected building has four floors, but its central part is five-storied and is raised to the level of the two-tier commentators' booths located in the northern grandstand. It will have vertical facilities for movement--two stairwells and elevators.

Premises for services for the competitions are located on three floors, to the right and left from the elevators: on the first floor are foyers for honored guests, officials and athletes, as well as an office; on the second floor are rooms for stadium boxes for honored guests and officials; and on the third floor is a communications terminal for the press center. The fourth floor has been set aside for television and radio equipment and an electrical switchboard, and here also are installations for balanced ventilation. A conference hall that seats 50 occupies the fifth floor.

A snack bar for judges, a press bar, and a snack bar for spectators, which have been placed at the ends of the western annex and run along almost the whole front of the third floor, are being organized on the basis of a food-services unit that is provided on the first and second stories.

For the convenience of guests there are additional restrooms at the ends of the annex's first floor. Trash chutes are planned for spots that are accessible from both halves of the western, southern and northern stands.

The design calls for reconstruction of the existing athletic arena and of grandstands for 6,800 spectators. The arena is to be specially adapted

General View of the Rebuilt Sokol'niki Sports Palace.
Photograph of the actual building.

Athletic Arena of the Sokol'niki Sports Palace,
for the Conduct of Handball Competitions.

to the conduct of handball games: the tarafleks covering has been eliminated, gates have been installed, netting is being put up to protect the stands, and places are being equipped for competitors and judges that will be furnished with judging information apparatus.

The western grandstand is almost completely allocated for accredited persons and will be clearly divided by barriers into sectors for various types of accreditation: honorary members of the MOK [International Olympic Committee], MOK members and directors and managers of national athletic delegations, jury members and judges, the press, honorary guests, members of national athletic delegations, and the management and services of the Olympic-80 organizing committee.

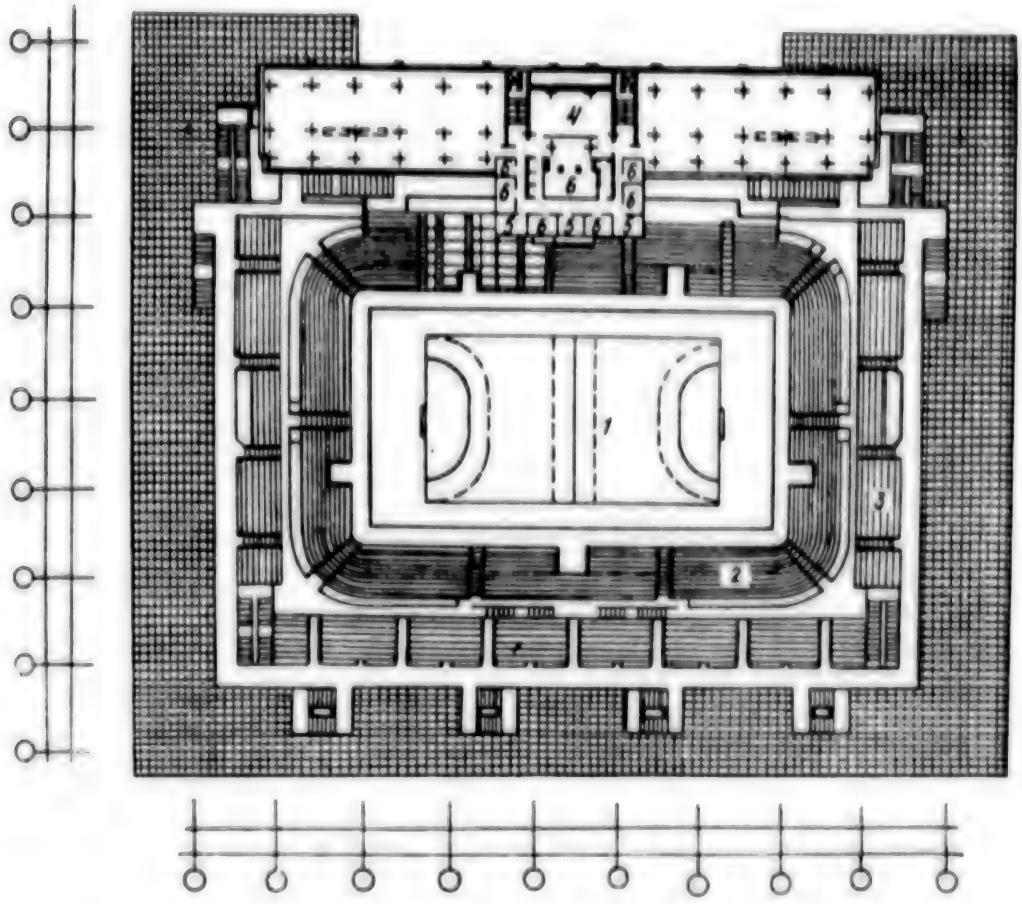
Passageways to the space beneath the grandstands are being expanded at all the stands, and barriers between sectors are being installed. Entrances for the grandstands and stadium boxes for honored guests are separated by travertine. In order to support color-television operations, searchlights have been installed on the ceiling of the competition hall. On the first tier, spots have been set aside for the placement of apparatus that will support the conduct of television reporting and motion picture recording. The girders are being freshly painted, glazing and fixtures are being restored, and some of the luminaires are being replaced.

Additional staircases are being built onto the palace's facades to the east, south and north. In order not to disturb the concept of the whole athletic structure, these staircases, along with the western reconstruction work, are being placed under the existing roof.

Rubdowns for athletes prior to competitions will be given in the newly constructed training hall, which is 96x38 meters. This is a one-story building that varies in height--about 10 meters at the center and 4.2 meters at the ends and along the main facade. It is in direct proximity to the main athletic arena and is joined with it by an underground passage. In the end portions there are to be dressing rooms for the competitors, and in the basement under the dressing rooms are saunas and rooms for the utilities services. Eventually the hall will be used for training hockey experts.

In connection with the construction of the training hall and because of the use of a new type of refrigerant, it has become necessary to erect a special cooling center. Chill for making ice will be brought from it to the central part of the hall. The necessary utilities grids and utilities lines are being laid for this purpose, and a header is being installed.

A transformer substation and boilerhouse are being erected on the grounds of the athletic complex, in addition to the cooling center. These utility facilities have been placed on the southern side and form a support activity with access thereto from the Sokol'niki Embankment.



Plan View of the Athletic Arena with Stands and the Fifth Story of the Western Annex

1. The athletic arena.
2. The first tier of the stands.
3. The second tier of the stands.
4. Conference hall.
5. Commentators' booths.
6. Utilities premises

The building of the western annex has been solved in a metal framework with metal tie pieces. The ceiling floors are reinforced concrete slab placed on metal beams. The staircases are prefabricated reinforced-concrete stair treads on metal stringers.

The training hall has a metal framework with a structural roof. The enclosure structure is brick with aluminum sash. The faceted ends of the structural slab are faced with aluminum.

This same material was used for solar protection for the western annex. The finish of the facades is high-quality plaster, which was later painted. The steps of the outer staircases and the entrance areas are faced with granite.

All the offices of the athletic complex that is being rebuilt are provided with modern systems of electrical communication, judging and information equipment, and other means for supporting conduct of large international competitions.

The sports palace has been located in proximity to the main entrance to Sokol'niki Park. The main approaches to it, and also the entrances for buses and cars, are being built along Sokol'niki Embankment. Therefore, there are parking lots for the motor vehicles of spectators, honorary guests, officials and athletes here.

The parking lots and the approaches to them are supplied with the appropriate signs, near which control and dispatcher points are to be located. Approach routes to the entrances to the grandstands and to parking lots will be marked in accordance with an automotive-transport traffic scheme that has been developed. The whole area is being surrounded by lightweight fencing.

For better orientation of the spectators--for residents and guests of the capital, including foreign tourists, a system of pictograms--clearly written and easily understood conceptual graphic representations without textual indicators--has been designed for the sports structures and the approaches to them. They will point out the offices, services, places for public use, traffic routes and so on.

While working on improvements to the athletic complex's grounds, the existing landscaping was preserved when new landscaping was being planted.

The design for the reconstruction of the Sokol'niki Sports Palace was developed in Studio No 7 of Mosproyekt-1 by a designers' collective under RSFSR Distinguished Architect V. Nesterov (manager), architects A. Yegorov, B. Shapiro, and M. Larina, and engineers Yu. Sil'vestrov, A. Ulanov and A. Pel'dman.

The work to renovate and expand the athletic complex is being done by builders' collectives of the USIP of Glavmospromstroy [Main Administration of Industrial Construction of the Moscow City Soviet].

11409
CSO: 1821

CONSTRUCTION

MOSCOW'S FACILITIES FOR SUMMER OLYMPICS REVIEWED

'TRUD' Report

Moscow NOVOSTI DAILY REVIEW in English 2 Apr 80 pp 1-3

["Abridged" version of article by V. Promyslov, Chairman of the Executive Committee of the Moscow Soviet of People's Deputies and Vice Chairman of 1980 Olympics Organizing Committee, in Moscow TRUD in Russian 1 Apr 80 p 4: "Moscow Says 'You Are Welcome'"]

[Text] Moscow is completing its preparations for the Olympic Games which will be held in a socialist state for the first time in Olympic history. The entire country took part in this large-scale and many-sided work. The preparations for the Olympics have become a truly nation-wide cause in the Soviet Union. This is only natural, since the ideas of the Olympic movement, the ideas permeated by the spirit of humanism, friendship and peace among peoples, are prized by the Soviet people. The USSR and first of all, Moscow with its 8-million-strong population are doing their best to ensure that the Olympic Games, as Comrade Leonid Ilich Brezhnev, General Secratary of the Soviet Communist Party's Central Committee and President of the USSR Supreme Soviet Presidium, has put it, "be staged at a high level and provide new impulses to the noble ideas of friendship and peace."

In the context of the Olympic preparations, large-scale construction work has been carried out in Moscow and a lot is being done to improve its outer appearance and to put it in exemplary order. The hotels, public catering and trade establishments, urban passenger transport, communal and everyday services and medical and cultural institutions are getting ready to receive and serve the Olympic athletes and visitors. We are doing all this work both to prepare well for the Olympics, and to make our city even more beautiful and improve the services for Muscovites and visitors.

The Lenin Central Stadium in Luzhniki and the Dynamo and Young Pioneers' Stadiums have been modernized. New sports facilities standing out for their original and bold architectural and engineering designs have been built.

The Moscow Olympic Velodrome in Krylatskoye is a unique sports facility of its kind. An indoor stadium seating 40,000 will be completed by the opening of the games near the Peace Avenue. Being one of the largest roofed stadiums in the world, it will be used after the games not only for sports competitions, but also for mass public, political and cultural activities.

New hotels will be put into service by the Olympic Games, increasing the total number of beds at the Moscow hotels by 27,000. This weighty addition appreciably improves the Soviet capital's ability to accommodate Soviet and foreign visitors.

The hotel complex of the All-Union Central Council of Trade Unions in Izmailovo is the biggest among the newly-built hotel facilities. It includes five 30-storeyed buildings, each accommodating 2000 visitors in one-and two-bed apartments. The total lodging capacity of the complex is 10,000.

The fine up-to-date building of Cosmos Hotel has been built opposite to the USSR Exhibition of National Economic Achievement on the basis of a design prepared by Soviet and French architects. The 22 stories of this hotel have about 1800 apartments with a total of 3500 beds.

Now a few words about such major factors as transport. Moscow's transport facilities include metro with its 114 stations and 185 km of lines; a ramified network of bus and streetcar lines with a total stretch of 1340 and 555 km respectively, and numerous tram lines. In addition, there are 16,000 cabs in Moscow. During the Olympics Moscow transport will be mobilized to handle both Muscovites and Olympic visitors. According to preliminary estimates, 75 percent of the Soviet and 25 percent of the foreign tourists will use these transport facilities during the games.

Special attention is being naturally given to the transport services for the Olympic athletes, officials, guests of honor, and newsmen. Cars, minibuses and buses have been earmarked for this purpose.

To hospitably and effectively receive the Olympic athletes and visitors, to prepare the city for this major event in world sport, to create all the conditions for staging the Olympics at a high level, and to do all possible so that those who will come to our capital go back home with fine impressions of the sports competitions and of the Moscow hospitality--these are the tasks on which we have been concentrating.

One of the key tasks is to raise the level of service. Workers in this sphere should have high professional skills, quickly and ably service clients and create an atmosphere of care and hospitality. We are doing our best so that people will be satisfied with the work of our services.

New stationary and temporary facilities, to be used during the games, will be built. The network of cafes, restaurants and eateries will thus be expanded.

Old public catering facilities are being modernized and repaired in tourist centers, sports complexes and main thoroughfares. Their design is being improved, and they are being provided with modern equipment.

Of course, great work is being done to host such major contests, which will be attended by numerous athletes, coaches, referees, newsmen, IOC members, representatives of international sports federations and national Olympic committees, other officials and Soviet and foreign tourists.

Late in 1979 the Presidium of the USSR Supreme Soviet examined preparations for the 22d Olympics. All aspects of Moscow's Olympic preparations are regularly discussed at the sittings of the Olympic commission of the City Party Committee led by its first secretary V. Grishin.

The 1980 Olympic Organizing Committee and the executive of the Moscow City Soviet are carefully preparing to host Olympians and other guests jointly with the All-Union Central Council of Trade Unions, the Komsomol Central Committee and Intourist. The Muscovites will certainly welcome them in the best traditions of our people and with true Moscow hospitality.

Just a bit more than 1 month ago the 82d IOC session at Lake Placid heard and approved reports by the 1980 Olympic Organizing Committee and the executive of the Moscow City Soviet on the Soviet capital's readiness for the games. The speakers had all grounds to say that Moscow is practically ready for the 22d Olympics and has done all the main things to hold them.

The 73 IOC members present at the session unanimously decreed that the 22d Olympics should be held in Moscow, as was planned.

The IOC took this decision, despite the attempts by the U.S. administration to frustrate the Moscow games and thereby to damage the world Olympic movement and its good traditions and humanistic ideals.

We are glad to hear reports from Canada, Sweden, Greece, Finland, Austria, Mexico and many other leading sports nations on their intensive preparations for the Moscow Olympics.

With a bit more than 3 months to go before the games we tell all our friends, "Welcome to Moscow!"

'PRAVDA' Report

Moscow NOVOSTI DAILY REVIEW in English 8 Apr 80 pp 1-2

["Abridged" version of article by L. Tokmakov in Moscow PRAVDA in Russian 6 Apr 80 p 6: "With Russian Hospitality"]

[Text] Less and less time remains before the world festival of youth and sport--the Olympic Games--bursts into the Moscow avenues and stadiums. Many Olympic visitors to the Soviet capital will be catered to by the

Moscow City Council on Tourism and Excursions. It will handle several dozens of thousands of tourists, among them foreign ones. In the following interview Chairman of the Council R. Chistyakov describes the preparations for receiving them.

[Question] Not so many days are left before the Olympic fortnight. Do you feel the pre-start emotion?

[Answer] No, we do not, because our Council began to get set for the games well in advance. We evolved exact schedules for the operation of all our services during the Olympics and did our best not to overlook even minor details. Moscow's traditional hospitality is based on economic analysis, mathematical calculations and the vast experience of our personnel.

[Question] Accomodation for the Olympic tourists is the main concern, isn't it?

[Answer] The Central House of Tourists built in the southwest of Moscow will be put into service by the opening of the Olympics. This building has 35 stories and the last one, the 35th, is Moscow's higheat point which has a landing for viewing the city. Another tourist complex, Salyut Hotel, is close by. The five 100-meter-high towers of the Izmailovo Hotel complex have risen in the opposite side of Moscow. The color gamut of its buildings corresponds to the colors of the Olympic rings.

The Olympic visitors will be accommodated also at Druzhba Hotel, Klyazminskoye Vodokhranilishche (Klyazma water storage) Holiday Hotel, Butovo camping site, and Zvenigorod tourist center, which are well-known to many tourists.

[Question] It is well known that many student hostels will be also used to lodge the Olympic visitors....

[Answer] Yes, work is now in progress on re-equipping some student hostels for the games. In Montreal many tourists had to live in rooms each accommodating up to 25 people. Our aim is to lodge not more than three tourists in one room. As many as 104 different facilities will be used to accommodate the Olympic visitors.

[Question] In what way do hotels intend to handle many thousands of guests?

[Answer] Partially this problem will be solved through substantially increasing the number of hotel attendants. During the Olympics we will have 25,000 hotel workers, 2100 drivers and over 1500 guides and interpreters. All tourist complexes will be provided with special automatic control systems. Nine computers will control reservation of rooms, accounting and other operations. Our main task is to rationally use all available hotels.

Of no less importance is to raise the attendants' skills within a short time. We hope that the graduates of the training center attached to our

Council and zonal advanced training courses for guides will help Olympic visitors to have a good time in Moscow. At present all those concerned, from waiters to elevator men, are studying. As many as 4300, our workers in 17 trades will improve their skills by the Olympics.

Cafes and eating houses intended for Olympic visitors are being outfitted with the latest equipment, furtniture and tableware. Makeshift eateries will also be erected. The Olympic menu has been compiled with due account taken of national cuisines.

[Question] What about the transportation of tourists in the Olympic Moscow?

[Answer] The number of buses with the emblem of our Council will nearly double to reach 2000. We will have a whole fleet of autos. At present transport agencies are planning parking lots and working out bus routes.

The guests will see all Moscow sights, historical monuments and other places of interest. Other trips will also be organized. In particular, tourists will be able to visit old Russian towns in the vicinity of Moscow.

CSO: 1812

END

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